
*** KEY ISSUES: CONFISCATION/WASTE ***

*** Leaseline spacing, unusual ***

*** condition, fair share ***

*** ***

*** FINAL ORDER: R37 GRANTED ***

RULE 37 CASE NO. 0219436

**APPLICATION OF COLT RESOURCES CORPORATION FOR AN EXCEPTION TO
STATEWIDE RULE 37 TO DRILL WELL NO. 1, R.B. MILLER LEASE, WILDCAT
AND SPEAKS, N. (3232 SD.) FIELDS, LAVACA COUNTY, TEXAS.**

APPEARANCES:

FOR APPLICANT:

David Nelson (Atty.)
Kevin B. Hill
Ed Childers
Greg Halvatzis

APPLICANT:

Colt Resources Corporation
"
"
"

FOR PROTESTANTS:

Flip Whitworth (Atty.)
Paul E. Habermas
M.C. Zeid
Thomas A. Collins

PROTESTANTS:

Hou-Tex, Incorporated
"
"
Rocksource Energy

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:

May 20, 1998

NOTICE OF HEARING:

June 23, 1998

DATE CASE HEARD:

August 7, 1998

HEARD BY:

Marshall Enquist, Hearings
Examiner
Margaret Allen, Technical
Examiner

TRANSCRIPT RECEIVED DATE:

September 14, 1998

PFD CIRCULATION DATE:

November 12, 1998

STATEMENT OF THE CASE

Colt Resources Corporation "Colt" seeks an exception to Statewide Rule 37 to drill its proposed Well No. 1 on the 129 acre R.B. Miller Lease in the Speaks, N. (3232 Sd.) and Wildcat Fields. The application is protested by Hou-Tex, Incorporated and Rocksource Energy, offsets to the south of the proposed location. Both the Speaks, N. (3232 Sd.) and Wildcat Fields require spacing of 467 feet from leaselines and 1200 feet between wells on 40 acre units.

The applied-for well has a surface location 224 feet north of the south line and a bottomhole location 154 feet north of the south line of the subject lease. The well will be directionally drilled because of surface conditions, in this case a stand of very large Live Oaks that the surface owner wishes to protect.

DISCUSSION OF THE EVIDENCE

COLT'S EVIDENCE

Colt presented three witnesses and 15 exhibits. Colt's exhibits demonstrate that the target reservoir has a strong water drive and that the applied-for location will be at the structural high of the reservoir, resulting in maximum recovery of gas.

The discovery well for this reservoir, the Reissig No. 1, was drilled in 1977 and watered-out twenty years later, in 1997 (see Attachment I). A replacement well, the Reissig No. 2, was drilled in 1997 and is the only well currently producing in this portion of the field.¹ The Reissig No. 2 is drilled at a location 8 feet higher on structure than the Reissig No. 1. In turn, applicant's applied-for location would be at a position 10 feet higher on structure than the Reissig No. 2. Three nearby wells, the Hobbs Nos. 2, 3 and 5, located south and southeast of the applied-for location, show sand in the target reservoir but the sand is wet.

Regional dip is from the NW to the SE, resulting in reservoirs that are often structurally higher in a northerly or northwesterly direction. Colt believes the target reservoir is a fluvial deposit, in this case a point bar, which is thickest toward the NW (25 to 30 feet) and slightly elongate along

¹ Colt notes that the Shoreham Hobbs Well No. 4, located about 4300 feet to the east of its applied-for location, is carried on the proration schedule as being in the Speaks, N. (3232 Sd.) Field, but Colt does not believe this is actually so. Colt believes the Shoreham Hobbs Well No. 4 is completed in a different structure and separate sand body that is not connected to the Reissig wells or the target structure. The Frio sands are fluvial (river-type) deposits consisting of sand bodies which may be time and stratigraphic equivalents, but which may not necessarily be connected. Colt does not think the target sand body beneath its lease is connected to the same sand body the Shoreham Hobbs No. 4 is completed in, even though both are currently considered to be in the same field.

a NNW by SSE trend (see Attachment II). The NW boundary is sharply defined, as opposed to the poorly defined SE boundary which either pinches out or waters out gradually.

Colt has good quality 3-D seismic over this area, with data points every 110 feet. Colt was able to tie the seismic data to a synthetic seismogram made from the acoustic log of the Reissig No. 1, and the 3232 Sand can be identified as an easily-mapped seismic event. An amplitude anomaly, or "bright spot", correlates well to the subsurface information and geologic interpretation of a gas-filled point bar. Colt believes that the bright spot corresponds to the location of productive sand. Because the NW boundary of the anomaly terminates so abruptly, Colt believes it must drill at an irregular location or miss the reservoir entirely. If the well location were moved only one trace (110 feet) farther from the lease line, it would miss the bright spot altogether. The abrupt edge of the reservoir means that there are only six or seven productive acres of reservoir beneath Colt's lease. The seismic anomaly, or bright spot, terminates more gradually to the southeast, where the reservoir ends in a movable gas/water contact. This accords well with Colt's interpretation of the reservoir as a point bar sand.

Colt believes the reservoir has a strong water drive, and notes that even after 20 years of production from the Reissig No. 1, reservoir pressure has dropped only slightly, from an original pressure of 1450 PSI to a current pressure of approximately 1300 PSI.

Colt estimates the target sand body originally contained 1.6 BCF of gas in place. After depletion by the Reissig No. 1, Colt estimates that 0.681 BCF of recoverable reserves remained. Colt estimates that the replacement well, the Reissig No. 2, will leave 0.160 BCF of gas in place after it waters out. 0.060 BCF of that remaining amount will be under Colt's lease, and will not be recoverable by the offsetting operator to the south.

Colt acknowledges that there may be reservoir quality sand outside the boundary of the reservoir it has mapped, but argues that this sand would be very thin and would not contain gas in economic quantities.

HOU-TEX'S EVIDENCE

Protestant Hou-Tex presented two witnesses and five exhibits. Hou-Tex believes the Speaks (3232 Sand) Field is much larger than Colt admits and that Colt's bright spot does not define the limits of the field but merely reflects the limit of resolution of the technology that was used. Hou-Tex argues that 3-D seismic is a coarse tool which has a resolution of only about ten to twelve feet.

Hou-Tex presented a structure map and a sand isopach map of the Speaks, N. (3232 Sand) Field derived from logs of surrounding wells. Hou-Tex disagrees with Colt over the origin and shape of the target reservoir and believes the target sand is a marine bar, which would be larger than a point bar, and would trend parallel to the old coastline in a NE by SW trend. If the structure is a marine bar, its high point would be expected to be near the middle of the bar, not at one edge as in

Colt's point bar model. Hou-Tex's structure map and gross sand map conform to the marine bar theory.

In Hou-Tex's geologic interpretation, Colt could drill at a regular location and still encounter five to eight feet of pay sand. Thus, Hou-Tex believes that Colt can drill a regular location, 467 feet from its leaseline, that will give it a reasonable opportunity to produce the recoverable gas underlying its lease.

If Colt is allowed to drill at its applied-for location, Colt will recover approximately 344,000 MCF of gas, greatly in excess of the 60,000 MCF underlying its tract. The difference will be made up of gas captured from the Hou-Tex lease to the south. Hou-Tex notes that Colt has an AFE for this well of \$200,000. If Colt were only going trying to recover the reserves under its own lease, the well would not be economic. Hou-Tex believes Colt should not be allowed to infringe on the spacing rule and take more than its fair share of hydrocarbons by draining the protestant's hydrocarbons.

Hou-Tex also pointed out what it believes to be several weaknesses in Colt's case. For example, none of Colt's exhibits show the presence of faults in the target area at the target depth. Hou-Tex's maps show faults in the area that it believes are well known and documented. Hou-Tex also pointed out what it believes to be errors in the sand elevations picked by Colt from well logs.

Hou-Tex admits that the reservoir has a water-drive but asserts that it is not 100% effective because the current pressure is slightly below the initial reservoir pressure. According to Hou-Tex, if there is a component of gas-depletion in the drive mechanism, then its well will be able to drain at least some of the gas updip from the well.

EXAMINERS' OPINION

Exceptions to Statewide Rule 37 may be granted to prevent waste or to protect correlative rights/prevent confiscation.

An applicant seeking an exception based on waste must establish three elements: 1.) unusual conditions, different from conditions in adjacent parts of the field, exist under the tract for which the exception is sought; 2.) as a result of the unusual conditions, hydrocarbons will be recovered by the well for which the permit is sought that would not have been recovered by any existing well or by additional wells drilled at regular locations; and 3.) that the volume of otherwise unrecoverable reserves is substantial.

Colt has presented credible evidence that the portion of the Speaks, N. (3232 Sand) Field beneath its lease is a structural high point. This, in combination with the reservoir's water drive, constitutes an unusual condition. A well at the applied-for location will recover hydrocarbons that cannot be recovered by the existing Reissig No. 2. When the Reissig No. 2 waters out, 0.16 BCF of recoverable gas, a substantial quantity, would remain in the reservoir. Even if Hou-Tex drills a

replacement well at a regular location south of the Miller Lease, that future well would probably recover no more than half of the remaining gas in the reservoir, still leaving a substantial quantity of recoverable gas in place. Colt is entitled to a Statewide Rule 37 exception based on waste.

The structure and sand isopach maps presented by Hou-Tex are based on sand picks from the logs of nearby wells. Unfortunately, not only are these wells often one thousand feet to one mile apart, but there are few well control points to the north, west, or east of applicant's R.B. Miller Lease. The maps presented by Colt integrate well control data with seismic data that was shot on 110 foot centers, resulting in a more reliable interpretation. Hou-Tex's geologic interpretation that a marine bar sand would exhibit coarsening at top and bottom while the interior of the bar would exhibit laminations due to tidal action is highly unlikely geologically. Normally, tidal action results in winnowing the sand to become cleaner. A marine bar usually exhibits finer sand at the base where the distal edge of the bar first develops. As a marine bar progrades over the finer sand, coarser and cleaner sands are deposited. A single bell-shaped sand such as Hou-Tex describes would almost never be preserved in the geologic record.

To obtain an exception to Statewide Rule 37 to protect correlative rights, the applicant must show: 1.) that it is not possible for the applicant to recover its fair share by placing the well at any regular location; and 2.) that the proposed irregular location is reasonable.

Colt's seismic cross-sections indicate that a well on the R.B. Miller Lease at a regular location will not penetrate the Speaks, N. (3232 Sand), therefore Colt cannot recover its fair share from a well drilled at a regular location. There are 0.06 BCF of recoverable gas in place beneath the R.B. Miller Lease. The proposed irregular location is at the edge of the target reservoir farthest from the lease line and will give Colt an opportunity to recover the reserves under its lease. The irregular location is a reasonable location and will be applicant's first well in this field. Colt is entitled to a Statewide Rule 37 exception based on confiscation.

Based on the record in this docket, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. Notice of hearing was given on June 23, 1998 to all designated operators, lessees of record for tracts that have no designated operator, and owners of record of unleased mineral interests for each adjacent tract and each tract nearer to the well than the prescribed minimum lease-line spacing distance.
2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed or have occurred.
3. The applicant, Colt Resources Corporation, seeks an exception to Statewide Rule 37 to drill Well No. 1 on the R.B. Miller Lease. Applicant proposes to drill its well at

a surface location 224 feet FSEL and 1110 feet FNEL (River) of the unit, and 655 feet FN1/4NWL and 1110 feet FNEL (River) of the survey, with a bottomhole location 154 feet FSEL and 1120 feet FNEL (River) of the unit, and 1783 feet FN1/4SWL and 725 FN1/4NWL of the survey. Applicant has applied for completion of its proposed well in the Speaks, N. (3232 Sd.) and Wildcat Fields, each having spacing rules of 467 feet to leaselines and 1200 feet between wells.

4. Applicant's R.B. Miller Lease is a tract of regular size and shape, containing 129 acres.
5. Applicant's primary objective is the Speaks, N. (3232 Sd.) Field. Applicant would not drill the well with the Wildcat Field as the sole objective.
6. Colt's applied-for location is at the structural high of the target reservoir. The structural high, in combination with the reservoir's strong water drive, constitutes an unusual condition beneath the applicant's lease.
7. Hydrocarbons will be recovered by applicant's well which can not be recovered by any existing well or by any future well drilled at a regular location.
8. Approximately 60,000 MCF of gas, a substantial quantity, beneath applicant's tract will be otherwise unrecoverable absent the grant of a permit for the applied-for location.
9. Applicant has no interest in tracts offsetting the unit.
10. A well at the applied-for location will be applicant's first well in this field.
11. An exception to the lease-line spacing rules for the applied-for fields is necessary to give the mineral interest owners a reasonable opportunity to recover their fair share of hydrocarbons in the subject fields underlying the unit.
 - a. There are currently recoverable reserves of 0.06 BCF beneath the applied-for unit.
 - b. Without the applied-for exception, these reserves cannot be recovered by the mineral interest owners of the R.B. Miller Lease.

CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties legally entitled to notice.
2. The application on Form W-1 was properly filed.
3. All things have occurred and have been done to give the Commission jurisdiction to decide this matter.
4. The mineral interest owners of the R.B. Miller Lease are entitled to an exception to Statewide Rule 37 to prevent waste.
5. An exception to the lease-line spacing requirements is necessary to permit drilling the applied-for well.
6. Approval of a permit to drill a well at the proposed location is necessary to give owners of the subject tract a reasonable opportunity to recover their fair share of hydrocarbons in the applied-for fields underlying the tract or the equivalent in kind, and to mitigate net uncompensated drainage, thereby preventing confiscation.

RECOMMENDATION

The examiners recommend that Applicant's request for an exception to Statewide Rule 37 for its R.B. Miller Lease, Well No. 1, as to the Speaks, N. (3232 Sd.) Field and Wildcat Field be granted.

Respectfully submitted,

Marshall F. Enquist
Hearings Examiner

Margaret Allen
Technical Examiner

MFE