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* KEY ISSUES: Confiscation/Waste   *
*             estimating "fair     *
*             share" in a water    *
*             drive reservoir      *
*                                  *
* FINAL ORDER: CONDITIONAL GRANT   *
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RULE 37 DOCKET NO. 0208992

APPLICATION OF TRIO OPERATING COMPANY INC. FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL ITS WELL NO. 1, HUSE LEASE, IN THE RED ASP (CHAPPEL), MEDICINE MOUNDS (CONGL. 7430) AND WILDCAT (8600) FIELDS, HARDEMAN COUNTY, TEXAS

APPEARANCES:	**REPRESENTING:**
FOR APPLICANT:	
David Gross (attorney)	Trio Operating Company
Herbert P. Mosca	
Robert L. Segar	
Dale Miller (consultant)	
FOR PROTESTANT:	
Robert Grable (attorney)	Fortson Oil Company
Mike Kulenguski	
M. W. Braden	

PROCEDURAL HISTORY

DATE APPLICATION FILED:	May 25, 1995
NOTICE OF HEARING:	June 9, 1995
HEARING DATE:	June 29, 1995
TRANSCRIPT RECEIVED:	July 12, 1995
PFD CIRCULATION DATE:	November 6, 1995
HEARD BY:	Jeffrey T. Pender, Hearings Examiner Thomas H. Richter, Technical Examiner

STATEMENT OF THE CASE

Trio Operating Company, Inc. ("Trio"), has applied to drill its first well on the 160 acre Huse Lease in the Red Asp (Chappel), Medicine Mounds (Congl. 7430) and Wildcat (8600) Fields ("subject lease" and "subject well") in Hardeman County, Texas. The Red Asp (Chappel) requires 660' lease-line and 1,320' between-well spacing on 160 acre units. The Medicine Mounds (Congl 7430) Field requires 467' lease-line and 1,200' between-well spacing on 80 acre units. Trio proposes to drill its well 50' from the east-line of the lease.
Trio claims that the proposed location is necessary to protect correlative rights and prevent waste.

Fortson Oil Company ("Fortson") protests Trio's application. The parties agree that Trio is entitled to a well. They differ only on the reasonableness of the proposed location.

EVIDENCE

TRIO'S WASTE CASE

To prove that a location is necessary to prevent waste, the applicant must show that due to some unusual surface or subsurface condition the proposed location is necessary to prevent the waste of a substantial amount of hydrocarbons and that no well at a regular location could recover the hydrocarbons. Trio contends that at the proposed location there is a 30' closure at the Red Asp (Chappel) level that contains 4,500 barrels of oil that cannot be recovered from a well at any other location.

Trio's consulting geophysicist, Mr. Segar, presented his interpretation of a seismic line that was reconstructed from a 3-D data set. The interpretation was made on the Chester reflector which undisputedly reflects the structure at the Chappel level. The line traverses the area of interest in a west-southwest to east-northeast direction. The line, referred to as line "Rule 37 Well Tie", goes through three wells in the field including the proposed location.

Mr. Kulenguski, Fortson's geophysicist, also presented a Chester seismic interpretation on two separate lines called "cross-line #54" and "in-line #75". The main difference between the partys' Chester interpretations is the shotpoint at which the Chester interpretation begins to veer downward, in time, going from right to left, in order to tie up with the portion of the Chester reflector east of shotpoint 50, as seen on "in-line #75". Trio's pick veers downward after shotpoint 54. Fortson's pick veers downward after shotpoint 55. If Trio's interpretation is correct, there may be a small "attic" structure at the proposed location. If Fortson is correct, no such structure exists, and Trio cannot makes its case based on waste prevention.

TRIO'S CONFISCATION CASE

The Red Asp (Chappel) Field is a strong water drive carbonate reservoir. As Trio's engineer,

Mr. Miller, testified on cross-examination, net acre-feet is not always a good predictor of productive acreage in Hardeman County. Oil production occurs mostly from the dolomatized portions of the reservoir. Moreover, there are no useful methods for predicting the presence of Dolomite. Estimating recoverable reserves is further hampered by the fact that the current oil-water contact cannot be accurately determined. Neither party refutes this.

Trio believes that the oil-water contact is at 7,105' subsea depth and Fortson believes the oil-water contact to be at 7,072' subsea depth. Trio bases its oil-water contact on an analysis of seven (7) wells in the area. Because no well in the area indicates a measurable oil-water contact, Trio bases its pick on the process of "bracketing" the location of the contact from information in wells that either produce water free, tested wet or started producing water. Not all the wells reviewed by Trio were completed in the Red Asp (Chappel) Field. However, Trio believes that the water aquifer leg is common to all the fields in the area. The parties agree that the reservoir mechanics indicate a very strong and efficient water drive as a result of a lower Ellenburger water aquifer. Under initial conditions the oil-water contact should be somewhat uniform across the area. As spill points are reached due to fluid withdrawals, oil-water contacts will vary.

Fortson bases its pick of 7,072' subsea depth on a DST analysis of the T. Marsh-Huse Well No. 1, about 1,750' southwest of Trio's proposed Rule 37 location. The results of the DST (drill stem test) from 8,490' to 8,565' subsurface depth indicated 100% water saturation. Fortson interprets these results to mean that the top of the Chappel porosity is at least as high as the top of the water-saturated zone as seen in the DST. Specifically, the parties disagree on whether the top of Chappel porosity in this well is at 8,498' subsurface depth (corrected to subsea = 7,072' [Fortson's pick]) or 8,540' subsurface depth (corrected to subsea = 7,105'[Trio's pick]).

Using 7,105' subsea for the current oil-water contact, Trio estimates that there are 442 MBO remaining recoverable reserves under 112 productive acres on the subject lease. Though Fortson disputes the validity of the methods used by Trio to estimate reserves, Fortson presented no estimate of its own. In fact, Fortson uses Trio's estimate in making its own recommendation for a reasonable location.

As stated earlier, Fortson does not contest that Trio needs a well on the lease to recover its fair share. Fortson only contests the reasonableness of Trio's proposed location. A reasonable location in this field would be one close enough to the high point on the structure to allow Trio to recover its fair share without causing undue drainage of Fortson's H&H lease. Both parties have prepared estimates of how much a well would drain if it were located on various "porosity-feet above the oil/water contact" contours. These drainage calculations are presented in Trio's Exhibit 18 and Fortson's Exhibit 10. By Trio's estimate, it should be permitted to drill a well at about the 65 foot contour level corresponding to about 150' from the lease line. Fortson estimates that Trio will recover 115% of the estimated 442 MBO at a 20 foot contour location corresponding to about 200' from the lease line on Trio's Exhibit 7. Fortson further claims that if Trio is permitted to drill only 150' from the lease line, Trio will recover in excess of 188% of its remaining recoverable reserves.

EXAMINER'S OPINION

TRIO'S WASTE CASE

The examiners believe that Trio has not proven that the requested location is necessary to prevent waste.

In reviewing the seismic interpretations one must remember that the zone of interest is right at the confluence of two reflectors. In such situations, the exact point of intersection is not resolvable and one must resort to inferring the lateral location of the point of intersection based on model responses or other reasonable methods. Trio presented none. Fortson does show rather convincingly that Trio's pick on cross-line #54 at trace 75 is more likely associated with the higher reflector and not the Chester reflector. This can also be observed on Fortson's in-line #75. Accordingly, the examiners believe Fortson's seismic interpretation in the area of the proposed well is more credible than Trio's.

Because Fortson's interpretation is more likely correct, there is no "attic oil" situation as Trio contends and no potential for waste. Trio's request for a permit to drill 50' from the lease line, to prevent waste, should be denied.

TRIO'S CONFISCATION CASE

The examiners believe that Trio's proposed 50 foot location is unreasonable in that there are less irregular locations that will afford Trio an opportunity to recover its share of hydrocarbons from under the subject lease.

Trio's estimation of the oil-water contact is more likely correct than Fortson's estimation. The Fortson-H.H. Well No. 1 is perforated from 7,060' to 7,066' subsea depth and since 1985 has produced approximately 700,000 BO and is currently producing 160 BOPD water free. The Fortson-H.H. Well No. 2 is higher on structure and has produced 130,000 BO since mid-1993 and is currently producing 230 BOPD water free. The total fluid withdrawal from the reservoir is 830,000 BO. If Fortson's oil-water pick of 7,072' subsea is correct, then the Fortson H.H. Well No. 1 has only 6' of oil column below its lowest perforations (7,060' to 7,066' subsea depth). Assuming no water coning and that the H.H. Well No. 1 on the verge of producing water, then 830,000 BO has been contained within that 6' interval, an unlikely occurrence given a recovery factor of only 867 BO/Ac-Ft. Therefore, Trio's estimate of the position of the oil-water contact is more likely correct.

Both Trio (through Trio Exhibit 18) and Fortson (through Fortson Exhibit 10) offer opinions as to which location, in terms of a porosity-foot contour, would permit Trio to recover its "fair share." Both parties have calculated the percent recovery of Trio's "fair share" as a function of which "net pay" contour it is permitted to drill on. Both sets of calculations rely on Trio's estimate of the oil-water contact. The solution to the "reasonable location" issue, therefore, lies in determining which party's calculations are more likely correct.

The examiners believe Fortson's estimation of the "fair share" contour. In deriving Trio Exhibit 18, Mr. Miller assumed that all of the acreage on the Huse Lease north of the H&H Lease would be drained solely by Fortson's wells on the H&H Lease. Mr. Miller also assumed that only the H&H wells would drain the H&H Lease. Neither of these assumptions are well-founded. As Fortson's Production Manager, Mr. Braden, pointed out, the Chappel is a strong water drive reservoir and wells completed at the same depth will water-out at the same time.

Fortson's calculations on Exhibit #10 are based on Trio's estimate of total recoverable reserves, Trio's "Porosity-Feet Above Present Oil/Water Contact" map and the assumption that each well in the field will produce at about the same rate thereby recovering 1/3 each, of the produced reserves until the Trio well waters-out. These assumptions are more reasonable. The examiners believe that Fortson's Exhibit 10 embodies the better approach to determining a reasonable location.

Accordingly, a reasonable location would be one located at the 20' contour on Trio Exhibit #7. At that location, Trio will likely recover its fair share of 442 MBO under the Huse Lease without unduly draining Fortson's H&H Lease.

FINDINGS OF FACT

1. Notice of hearing was given on June 9, 1995, to all designated operators, lessees of record of 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. Trio Operating company, Inc. ("Trio"), has applied to drill its first well, 50' from the east-line, on the 160 acre Huse Lease in the Red Asp (Chappel), Medicine Mounds (Congl. 7430) and Wildcat (8600) Fields ("subject lease" and "subject well") in Hardeman County, Texas.

3. The Red Asp (Chappel) requires 660' lease-line and 1,320' between-well spacing on 160 acre units. The Medicine Mounds (Congl 7430) Field requires 467' lease-line and 1,200' between-well spacing on 80 acre units.

4. There are no geologic structures at the level of the Red Asp (Chappel) Field, on the subject lease, that create the potential for "attic oil."

5. There are 442 MBO remaining reserves recoverable from under the subject lease in the Red Asp (Chappel) Field.

6. There is no evidence that Trio could not recover its share of hydrocarbons under the subject lease from a regular location in the Medicine Mounds (Congl. 7340) Field.

7. The applicant's proposed location is not reasonable because less irregular locations between

the 10' and 20' contours, as shown on Trio's Exhibit #7, will provide Trio with a fair opportunity to recover its share of hydrocarbons without unduly draining Fortson's H&H Lease.

8. Locations between the 10' and 20' contours, as shown on Trio's Exhibit #7, are reasonable locations because they will provide Trio with a fair opportunity to recover its share of hydrocarbons under the subject lease in the Red Asp (Chappel) Field without unduly draining Fortson's H&H Lease.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.

2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.

3. Trio is not entitled to an exception to Statewide Rule 37 to prevent waste.

4. Trio is not entitled to an exception to Statewide Rule 37 at the applied-for location in order to prevent confiscation because the proposed location is unreasonable.

RECOMMENDATION

The examiner's recommend that the above findings and conclusions be adopted and that the applicant, Trio, be permitted to drill a well in the Red Asp (Chappel) Field at a location between the 10' and 20' contours, as shown on its Exhibit #7.

Respectfully submitted,

Jeffrey T. Pender
Hearings Examiner

Thomas H. Richter, P.E.
Technical Examiner

JTP/bjw