

**Key Issues:**

**R37 Granted/Denied**

**RULE 37 CASE NO. 0222305**

---

**APPLICATION OF ABRAXAS PETROLEUM CORPORATION FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL WELL NO. 5H, -32- HALL LEASE, BLOCK 16 (DEVONIAN) FIELD, WARD COUNTY, TEXAS.**

---

**APPEARANCES:**

**FOR APPLICANT:**

George C. Neale, Attorney  
Ron Grant, Petroleum Geologist  
Greg Cloud, Petroleum Engineer  
Jeff Marshall

**APPLICANT:**

Abraxas Petroleum Corporation  
“  
“  
“

**FOR PROTESTANTS:**

Tim George, Attorney  
William T. Duncan, Staff Engineer  
Carl Mazzo, Senior Exploitation Geologist

**PROTESTANTS:**

Exxon Corporation  
“  
“

**AMENDED PROPOSAL FOR DECISION**

**PROCEDURAL HISTORY**

<b>APPLICATION FILED:</b>	August 3, 1999
<b>NOTICE OF HEARING:</b>	August 10, 1999
<b>DATE CASE HEARD:</b>	September 2, 1999
<b>HEARD BY:</b>	Dan Ortman, Hearings Examiner Donna Chandler, Technical Examiner Marshall Enquist, Hearings Examiner
<b>PREPARED BY:</b>	
<b>TRANSCRIPT DATE:</b>	September 7, 1999
<b>PFD CIRCULATION DATE:</b>	December 29, 1999
<b>RE-OPEN DATE:</b>	January 28, 2000
<b>AMENDED PFD CIRCULATION DATE:</b>	February 24, 2000

### **STATEMENT OF THE CASE**

Abraxas Petroleum Corporation ("Abraxas") seeks an exception to Statewide Rule 37 to drill its proposed Well No. 5H on the 704 acre -32- Hall Lease in the Block 16 (Devonian) Field. Exxon Corporation ("Exxon"), an offset to the north of the proposed location, protests the application. The Block 16 (Devonian) Field requires spacing of 1,867 feet from leaselines and 3,735 feet between wells on 640 acre units.

The applied-for well will be drilled from a surface location 350 feet from the north line of the lease and 425 feet from the southeast line of the lease. The well penetrates the target interval at a location 467 feet from the north and southeast lines of the subject lease and proceeds 2900 feet in a southwesterly direction to a terminus point 1200 feet from the north line and 1275 feet from the southeast line of the lease. The lateral will be drilled on a slant to intersect the upper, middle and lower intervals of the target field. The entire length (2900 feet) of the slanted horizontal lateral is within a Rule 37 distance of adjacent leaselines (see Attachment II).

### **DISCUSSION OF THE EVIDENCE**

#### **APPLICANT'S EVIDENCE**

The applicant, Abraxas, presented two witnesses and 28 exhibits. Abraxas bases its case on confiscation, arguing that 1.8 to 2.62 BCF of currently recoverable gas remains beneath its unit.

The Abraxas -32- Hall Lease is roughly the shape of a boot with the toe pointed northeast (see Attachment I). The unit is bisected by a fault which runs in a northwesterly/southeasterly direction from the top of the boot through the midpoint of the sole. The exact location of the fault is unknown, but the dry hole Texaco G.T. Hall Well No. 1 serves as a control to the SW of the fault. The portion of the Abraxas unit on the northeast side of the fault overlies a block that is upthrown approximately 1200 feet relative to adjacent blocks. Abraxas believes this portion of its unit, amounting to 381 acres, is productive in the Block 16 (Devonian) Field, whereas the remainder of its acreage to the SW of the fault is not, thus eliminating the possibility of production from the SW half of the Abraxas Lease. The existing -32- Hall Well No. 1 has drained the northernmost portion of the lease, but Abraxas does not have a well to drain the "foot" of the lease. Abraxas' proposed well will drain the "foot" on the productive side of the fault. Abraxas believes it is necessary to drill the horizontal portion of the wellbore at a slant to intersect the upper, middle and lower zones of the Block 16 (Devonian) Field. Abraxas argues that the proposed location of the wellbore, centered between the offsetting tracts operated by Mobil and Exxon, is reasonable.

According to Abraxas, there was originally 41.8 BCF of gas in place under its unit, of which 39.5 BCF was recoverable, with bottomhole pressures exceeding 6,000 psia. The total current gas in place is 4.186 BCF, with bottomhole pressures of approximately 500-600 psia. Thus, 37.623 BCF has been removed and the reservoir is significantly pressure depleted. Because Abraxas has recovered only 13.349 BCF of gas through its -32- Hall Well No. 1, it believes it has suffered drainage in the amount of 24.184 BCF. This may be due, at least in part, to the Exxon Pyote 2-2,

which is located only 933 feet from the Abraxas lease line, approximately one half the required lease line spacing distance.

The existing -32- Hall Well No. 1, which is at the northwest end of the boot and NE of the fault, has drained the bulk of the gas under the northwest end of the unit, but is currently producing only 5 to 10 MCF per day. Abraxas believes the greatest part of the gas in place under its unit (4.186 BCF) is found in the forefoot of the boot. Abraxas did not present a single figure representing its fair share of remaining recoverable reserves, but relied, instead, on figures representing remaining recoverable reserves under three different abandonment scenarios. Assuming an abandonment pressure of 293 psi, remaining recoverable reserves beneath the tract are 1.876 BCF. Alternatively, assuming an abandonment pressure of 200 psi, remaining recoverable reserves are 2.62 BCF. At an abandonment pressure of 100 psi, remaining recoverable reserves increase to 3.4 BCF. Abraxas' fair share of recoverable reserves is, therefore, a minimum of 1.876 BCF. Abraxas assumes its well must produce 2,000 MCF/day to be economical and estimates the well will return 60% on investment and pay out in 1.3 years.

### **PROTESTANT'S EVIDENCE**

Exxon did not present any witnesses or exhibits. Instead, Exxon argued that Abraxas failed to carry its burden of proof. Exxon notes that the entire run of the proposed wellbore is within a Rule 37 lease line spacing distance of Exxon's lease. Exxon contends that this long slanting horizontal bore is unnecessary because Abraxas can obtain its fair share with a much less irregular vertical well. The well logs supplied by Abraxas demonstrate that the upper, middle and lower intervals of the Block 16 (Devonian) Field can be accessed by a vertical well anywhere along the line of the proposed wellbore. A vertical well located near the terminus of the proposed wellbore would be considerably less irregular, would access all three target intervals and would probably recover Abraxas' fair share of hydrocarbons. Exxon notes that the offset wells, the Exxon Pyote Well No. 2-2 and the Mobil Hill Well No. 1, have deliverabilities of 1.5 and 1.7 million cubic feet per day, respectively, with roughly one half the bottomhole pressure projected for the proposed well. Exxon argues that Abraxas has failed to meet its burden of proof because it has not shown that it cannot recover its fair share from a less irregular location.

### **EXAMINERS' OPINION**

Exceptions to Statewide Rule 37 may be granted to prevent waste or to protect correlative rights/prevent confiscation. Abraxas presented a case based on protection of correlative rights/prevention of confiscation.

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.

The only regular locations on the -32- Hall Lease are within the calculated 1,350 foot drainage radius of the existing -32- Hall Well No. 1, which has already depleted the reservoir in its

vicinity. Abraxas cannot recover its fair share of the remaining recoverable hydrocarbons under its pooled unit from the existing well, or from a second well at a regular location.

The evidence indicates that Abraxas can recover its fair share of recoverable reserves from a vertical well, and that a vertical well would intersect the upper, middle and lower zones of the target interval at any point along the line of the proposed well. Abraxas argues that it must drill a well capable of producing 2.0 million cubic feet per day in order to make the project economically viable. However, reasonable opportunity to recover fair share, not economic viability, is the proper legal standard. The two wells offsetting the Abraxas tract, the Exxon Pyote No. 2-2 and the Mobil Hill No.1, have bottomhole pressures of around 200-300 psia, significantly lower than the 500 psia bottomhole pressure that Abraxas has projected for its proposed well. The Exxon Pyote No. 2-2 has a current deliverability of 1.5 million cubic feet per day and the Mobil Hill No. 1 has a deliverability of 1.7 million cubic feet per day. It is highly likely that a vertical well drilled near the terminus or within a few hundred feet of the terminus of the proposed wellbore will be capable of producing the two million cubic feet per day Abraxas claims it needs for an economically viable project and, presumably, for the recovery of its fair share of reserves.<sup>1</sup> More importantly, such a well will give Abraxas a reasonable opportunity to recover its fair share of recoverable reserves with far less drainage of offset leases than the applied-for horizontal well. The location of the proposed well is not reasonable because it is irregular to leaselines along its entire 2900 foot length, because a horizontal well is not necessary for Abraxas to recover its fair share and because the applied-for well would drain far more gas from offset mineral interests than a vertical well. Abraxas can recover its fair share of the reserves under its lease (or their equivalent) with a less irregular vertical well.

After the original PFD was circulated on December 29, 1999, the exceptions and replies received indicated that Abraxas was willing to accept a permit for a vertical well and Exxon (through merger, now Exxon Mobil Corporation, hereinafter referred to as "Exxon/Mobil") would not object. The examiners re-opened the hearing on January 28, 2000, for the limited purpose of allowing Abraxas to designate a specific location for a vertical well on its -32- Hall Lease. On February 7, 2000, Abraxas responded, indicating that it would accept a permit for a vertical well 1100' FNL and 1175' FSEL of the unit and survey lines (see Attachment II - recommended vertical well location at orange dot). On February 15, 2000, Exxon/Mobil responded, indicating it had no objection to the vertical well location suggested by Abraxas.

A vertical well at the agreed upon location will enable Abraxas to recover its fair share of the currently recoverable reserves beneath its -32- Hall Lease. The vertical well location is significantly less irregular than the applied-for horizontal well and is reasonable.

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

---

<sup>1</sup> Abraxas' economics are based on the cost of a horizontal well compared to the recovery of only 1.8 BCF of gas. There is no evidence about the cost of a vertical well or the expected recovery from a vertical well.

**FINDINGS OF FACT**

1. Notice of hearing was given on August 10, 1999 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, Abraxas Petroleum Corporation, seeks an exception to Statewide Rule 37 to drill Well No. 5H ("subject well") on the -32- Hall Lease. Applicant proposes to drill its well at a surface location 350 feet FNL and 425 feet FSEL of the unit, and 350 feet FNL and 425 feet FSEL of the survey. Applicant has applied for completion of its proposed well in the Block 16 (Devonian) Field, having spacing rules of 1,867 feet leaseline spacing and 3,735 between well spacing on 640 acre units.
4. Applicant's -32- Hall Lease is a tract of regular size, containing 704 acres. The lease is bisected by a fault running in a northwesterly/southeasterly direction. The portion of the lease on the northeast side of the fault, amounting to 381 acres, is productive in the Block 16 (Devonian) Field. The portion of the lease on the southwest side of the fault is not productive in the Block 16 (Devonian) Field.
5. Applicant's primary objective is the Block 16 (Devonian) Field.
6. Applicant has no interest in tracts offsetting the unit.
7. All regular locations on the -32- Hall Lease are within the drainage radius of the existing -32- Hall Well No. 1, which has depleted the target reservoir in its vicinity. Abraxas cannot recover its fair share of recoverable reserves in the Block 16 (Devonian) Field from a second well at a regular location
8. The entire length (2900 feet) of the lateral of the proposed Abraxas -32- Hall Well No. 5H is irregular to adjacent leaselines.
9. The vertical Exxon Pyote Well No. 2-2, immediately NW of the proposed well, has a deliverability of 1.5 million cubic feet per day. The vertical Mobil Hill Well No. 1, SW of the proposed well, has a deliverability of 1.7 million cubic feet per day. The offset wells have a bottomhole pressure of approximately 200-300 psia.
10. The proposed well is projected to have a bottomhole pressure of 500 psia.
11. A vertical well placed anywhere along the line of the proposed well can penetrate the upper, middle and lower zones of the Block 16 (Devonian) Field.

12. A vertical well placed 1100' FNL and 1175' FSEL of the unit and survey lines of the -32- Hall Lease would be less irregular than the proposed horizontal well and would recover Abraxas' fair share of the remaining recoverable Block 16 (Devonian) Field gas in place beneath the lease, or an equivalent volume.
13. A vertical well placed 1100' FNL and 1175' FSEL of the unit and survey lines of the -32- Hall Lease would drain far less Block 16 (Devonian) Field gas from offset mineral interests than the applied-for horizontal well and would be reasonable.

**CONCLUSIONS OF LAW**

1. Proper notice was timely given to all parties legally entitled to notice.
2. All things have occurred and have been done to give the Commission jurisdiction to decide this matter.
3. The applied-for horizontal well exception location is not necessary to give the mineral interest owners of the -32- Hall Lease a reasonable opportunity to recover their fair share of the Block 16 (Devonian) Field reserves under their lease.
4. The location of the applied-for horizontal well is not reasonable.
5. A vertical well 1100' FNL and 1175' FSEL of the unit and survey lines of the -32- Hall Lease will provide the mineral interest owners of the -32- Hall Lease a reasonable opportunity to recover their fair share of the Block 16 (Devonian) Field reserves under their lease.
6. A vertical well location 1100' FNL and 1175' FSEL of the unit and survey lines of the -32- Hall Lease is reasonable.

**RECOMMENDATION**

The examiners recommend that Applicant's request for an exception to Statewide Rule 37 for its -32- Hall Lease, Well No. 5H, as to the Block 16 (Devonian) Field, Ward County, Texas be denied. The examiners recommend that a Statewide Rule 37 exception permit for a vertical well 1100' FNL and 1175' FSEL of the unit and survey lines of the -32- Hall Lease be granted.

Respectfully submitted,

Marshall F. Enquist  
Hearings Examiner

Donna Chandler  
Technical Examiner

MFE