



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

OIL AND GAS DOCKET NO. 09-0282219

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THE APPLICATION OF ANSCHUTZ EXPLORATION CORPORATION TO CONSIDER  
A NEW FIELD DESIGNATION AND TO ADOPT TEMPORARY FIELD RULES FOR THE  
PROPOSED PREMONITION (BARNETT SHALE) FIELD, WILBARGER COUNTY,  
TEXAS

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HEARD BY: Richard D. Atkins, P.E. - Technical Examiner  
Michael Crnich - Legal Examiner

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DATE OF HEARING: August 2, 2013

APPEARANCES:

REPRESENTING:

APPLICANT:

Michael McElroy  
John McBeath

Anschutz Exploration Corporation

### EXAMINERS' REPORT AND RECOMMENDATION

#### STATEMENT OF THE CASE

Anschutz Exploration Corporation ("Anschutz") requests that a new field designation called the Premonition (Barnett Shale) Field (ID No. 72934 500) be approved for its White Lease, Well No. 1H. Anschutz proposes that the following Temporary Field Rules be adopted for the new field, subject to review in 24 months:

1. Designation of the field as the correlative interval from 7,260 feet to 7,426 feet as shown on the log of the Anschutz Exploration Corporation - White Lease, Well No. 1H (API No. 42-487-32861);
2. 467'-933' well spacing with no minimum between well spacing between horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet and special provisions for "take points", 100' lease line spacing for the first and last take points, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells;

3. 160 acre oil units with optional 80 acre density and a special provision for additional acreage assignment to horizontal drainhole wells based on the formula  $A = (L \times 0.15) + 160$ ;
4. Allocation based on 100% acres with a Top Oil Allowable based on the 1965 Yardstick Allowable of 353 barrels of oil per day;

Anschutz also requests that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation.

The application is unopposed and the examiners recommend approval of the new field designation and adoption of Temporary Field Rules for the Premonition (Barnett Shale) Field, subject to review in 24 months, as requested by Anschutz.

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### DISCUSSION OF EVIDENCE

Anschutz completed its White Lease, Well No. 1H, in August 2012 with perforations in the Barnett Shale formation between 7,608 feet (MD) and 8,705 feet (MD). On initial test, the well produced flowing at a maximum rate of 94 BOPD, 200 MCFGPD and 116 BWPD with a 2,127 cubic feet per barrel gas-oil ratio. Currently, Anschutz and Cabot Oil & Gas Corporation are the only operators in the new field and they are partners in the new field development.

A new field designation should be approved for the White Lease, Well No. 1H, as there is no comparable production within a 2.5 mile radius of the discovery well. The closest comparable field is the Newark, East (Barnett Shale) Field located approximately 25 miles to the east in Wichita County. Anschutz requests that the correlative interval from 7,260 feet to 7,426 feet as shown on the log of the Anschutz Exploration Corporation - White Lease, Well No. 1H (API No. 42-487-32861), Section 9, Block 12, H&TC RR Co. Survey, A-154, Wilbarger County, Texas, be designated as the Premonition (Barnett Shale) Field. The correlative interval includes the entire Barnett Shale formation, which is located between the base of the Morrow and the top of the Chester formations.

Anschutz is proposing to develop the field with horizontal drainhole wells and requests Temporary Field Rules to promote the efficient and effective development of the remaining hydrocarbons. Anschutz proposes 467'-933' well spacing with no minimum between well spacing between horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet and special provisions for "take points", 100' lease line spacing for the first and last take points, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells. Similar Field Rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Cotton Valley, Bone Spring and Barnett Shale formations.

Anschutz requests that a field rule be adopted which includes language relevant to the measurement of distances to lease lines for horizontal drainhole wells. Anschutz's proposed rule specifies that, for purposes of lease line spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well.

Anschutz proposes a tolerance "box rule" for horizontal drainhole wells that would allow drainholes to deviate 50 feet from either side of their permitted track without the necessity of obtaining a Statewide Rule 37 exception. As drilled wells for which all points are located within the "box" would be considered in compliance with their drilling permits.

In some cases, it is beneficial to penetrate the reservoir off lease, while still having "take points" no closer to lease lines than allowed under the field rules. Anschutz requests that Field Rules for the subject field provide for an "off-lease" penetration point. Statewide Rule 86 requires that the penetration point of a horizontal drainhole be on the lease. In this field, a well generally requires approximately 600 feet of horizontal displacement to make the 90 degree turn from vertical to horizontal. If the penetration point is required to be on the lease, then the first point of production would be about 600 feet from the lease line. The proposed rule will allow approximately 500 feet of additional producing drainhole, resulting in the recovery of additional oil and gas reserves. The Commission has adopted similar rules allowing offsite penetration points in other fields, after the operator has given notice to the mineral owners of the off-lease tract on which the penetration point is to be located and received no protest.

The Premonition (Barnett Shale) Field is located in the Bend Arch-Fort Worth Basin and the Barnett Shale formation is correlative across the entire area. The Barnett Shale formation is a low permeability shale reservoir that requires fracture stimulation and has a solution gas drive as the primary drive mechanism. Anschutz is requesting that the first and last take points of a lateral be as close as 100' to lease lines. The Barnett Shale reservoir has oriented fractures and most of the drainage is along the fracture orientation with little contribution from the matrix in a perpendicular direction. A wellbore can be presumed to be drilled to encounter the maximum number of fractures and, therefore, be perpendicular to the fracture direction. The end points of such a lateral will not drain over 100' from the matrix in a direction perpendicular to fracture direction. The 100' leaseline spacing for the first and last take points will result in the additional recovery of reserves.

Anschutz requests 160 acre oil units with a special provision for the additional acreage assignment to horizontal drainhole wells based on the formula  $A = (L \times 0.15) + 160$ . Anschutz believes that horizontal drainhole wells will drain up to 640 acres and the proposed formula is similar to the one used in other tight formation fields. For purposes of the assignment of additional acreage pursuant to the formula above, it is proposed that the distance between the first and last take points in a horizontal drainhole well be used.

Anschutz requests that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation. Anschutz proposes allocation based on 100% acres with a Top Oil Allowable based on the 1965 Yardstick Allowable of 353 barrels of oil per day.

### FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the date of the hearing and no protests were received.
2. Anschutz Exploration Corporation ("Anschutz") completed its White Lease, Well No. 1H, in August 2012 with perforations in the Barnett Shale formation between 7,608 feet (MD) and 8,705 feet (MD).
  - a. On initial test, the well produced flowing at a maximum rate of 94 BOPD, 200 MCFGPD and 116 BWPD with a 2,127 cubic feet per barrel gas-oil ratio.
  - b. Currently, Anschutz and Cabot Oil & Gas Corporation are the only operators in the new field and they are partners in the new field development.
  - c. The White Lease, Well No. 1H, is entitled to a new field designation, as there is no comparable production within a 2.5 mile radius of the discovery well.
  - d. The Premonition (Barnett Shale) Field is actively being developed with horizontal drainhole wells.
3. The correlative interval from 7,260 feet to 7,426 feet as shown on the log of the Anschutz Exploration Corporation - White Lease, Well No. 1H (API No. 42-487-32861), Section 9, Block 12, H&TC RR Co. Survey, A-154, Wilbarger County, Texas, should be designated as the Premonition (Barnett Shale) Field. The correlative interval includes the entire Barnett Shale formation, which is located between the base of the Morrow and the top of the Chester formations.
4. Temporary Field Rules providing for 467'-933' well spacing with no minimum between well spacing between horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet and special provisions for "take points", 100' lease line spacing for the first and last take points, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells will provide consistency in developing the field and will allow greater flexibility in selecting future drilling locations.

5. A spacing rule which utilizes “take-points” in a horizontal well for determination of distances to lease lines will prevent waste and will not harm correlative rights.
    - a. A take-point in a horizontal drainhole well in this field may be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
    - b. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.
  6. The proposed 50’ “box” rule is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
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7. Allowing an “off-lease” penetration point will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells. To protect correlative rights, prior notice and opportunity to object should be given to the mineral owners of “off-lease” surface locations.
  8. A 100’ leaseline spacing for the first and last take points will result in an additional recovery of reserves.
    - a. The Barnett Shale formation is a low permeability shale reservoir that requires fracture stimulation.
    - b. The Barnett Shale reservoir has oriented fractures and most of the drainage is along the fracture orientation with little contribution from the matrix in a perpendicular direction.
    - c. A wellbore can be presumed to be drilled to encounter the maximum number of fractures and, therefore, be perpendicular to the fracture direction.
    - d. The end points of such a lateral will not drain over 100’ from the matrix in a direction perpendicular to fracture direction.
  9. Adoption of 160 acre oil units with a special provision for additional acreage assignment to horizontal drainhole wells based on the formula  $A = (L \times 0.15) + 160$  is appropriate for the field.
    - a. Horizontal drainhole wells will drain up to 640 acres and the proposed formula is similar to the one used in other tight formation fields.

- b. For purposes of assignment of additional acreage pursuant to the special formula, the distance between the first and last take points in a horizontal drainhole well should be used.
  10. Similar Field Rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Cotton Valley, Bone Spring and Barnett Shale formations.
  11. Allocation based on 100% acres with a Top Oil Allowable based on the 1965 Yardstick Allowable of 353 barrels of oil per day is a reasonable formula which will protect correlative rights and meet statutory requirements.
  12. The filing of Form P-15 to designate the number of acres to be assigned to each well for proration purposes with no proration unit plats will eliminate unnecessary paperwork.
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#### **CONCLUSIONS OF LAW**

1. Proper notice of this hearing was issued.
2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
3. Approval of the requested new field designation and adoption of Temporary Field Rules for the Premonition (Barnett Shale) Field will prevent waste, protect correlative rights and promote the orderly development of the field.

#### **RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve the new field designation and adopt Temporary Field Rules for the proposed Premonition (Barnett Shale) Field, subject to review in 24 months, as requested by Anschutz Exploration Corporation.

Respectfully submitted,

  
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Technical Examiner

  
Michael Crnich  
Legal Examiner