

THE APPLICATION OF CIMAREX ENERGY, CO. TO AMEND THE FIELD RULES FOR THE PHANTOM (WOLFCAMP) FIELD, WARD COUNTY, TEXAS

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

HEARING DATE: February 27, 2009

APPEARANCES:

Michael McElroy
Michael Feltch

REPRESENTING:

Cimarex Energy Company

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

The Phantom (Wolfcamp) Field currently operates under Temporary Field Rules adopted by Final Order No. 08-0253661, effective December 18, 2007.

1. Designation of the field as the interval from the top and bottom of the Wolfcamp as found between approximately 10,446 feet and 10,933 feet as shown on the log of the Bernice Howard Well No. 1;
2. 467'-933' well spacing, providing that the restrictions on spacing between wells shall not apply to horizontal wells that are parallel or subparallel and do not overlap more than 100 feet;
3. 320 acre oil units with optional 40 acre density;
4. Allocation based on 95 percent acreage and 5 percent per well.

Cimarex Energy Company ("Cimarex") requests that Field Rule Nos. 2, 3 and 4 be amended as shown below.

2. 467'-933' well spacing and a special provision for "take points" in a horizontal drainhole well;
3. 320 acre oil units with optional 40 acre density and a special provision for an additional acreage assignment for horizontal drainholes based on the formula $A = (L \times .32829) + 320$;

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4. Allocation based on 95 percent acreage and 5 percent per well with a fieldwide MER allowable of 1,000 BOPD.

At the hearing, Cimarex amended its request for a fieldwide MER allowable of 1,000 BOPD and requested instead to provide for a special oil allowable based on 3.0 BO per oil unit acre. Cimarex also requested that all over production in the field be cancelled.

The examiner recommends that the multiplier to assign additional acreage for each horizontal lateral well not be approved, as the data provided did not demonstrate that the additional acreage calculated by the multiplier was required to prevent waste. The examiner recommended that acreage be assigned using the following table that limits the maximum amount of acreage assigned to each horizontal lateral well to 640 acres plus a 10 percent tolerance or 704 acres.

Horizontal Drainhole Length, feet	Maximum Proration Unit Size, acres
0' - 1,500'	320
1,500' - 3,000'	480
3,000' - 4,500'	640
> 4,500'	704

Cimarex did not consider this recommendation to be adverse. This application was unopposed and the examiner recommends that the Field Rules for the Phantom (Wolfcamp) Field be adopted as proposed by Cimarex, except for the horizontal well acreage multiplier.

DISCUSSION OF EVIDENCE

The Phantom (Wolfcamp) Field was discovered in June 1983 at a depth of 11,002 feet. The discovery well for the field was the HNG - Lee 128 Lease, Well No. 1. Temporary Field Rules currently provide for 467'-933' well spacing and 320 acre oil units with optional 40 acre density. There are six oil wells carried on the proration schedule and four of the wells are horizontal drainhole wells. The two existing vertical wells are marginal producers, each producing less than 5 BOPD. Cumulative production from the field through January 2009 is 515.0 MBO and 587.2 MMCFG.

Although the Phantom (Wolfcamp) Field name implies that the field is producing from Wolfcamp carbonates, in actuality, the wells produce from various Bone Spring Sands. Numerous other fields in the area that produce from Bone Spring Sands, such as the War-Wink, S. (Wolfcamp) Field and the Two Georges (Bone Spring) Field, are undergoing

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redevelopment by drilling horizontal wells.

Cimarex is also redeveloping the Phantom (Wolfcamp) Field by drilling additional horizontal wells. Although only four horizontal wells are listed on the proration schedule, Cimarex has many other wells on production and in various stages of drilling and completion. A drainage area calculation for one of the best vertical wells in the field area indicates the well will drain 291 acres. Drainage area calculations for two of the horizontal lateral wells indicate the wells will drain between 520 and 581 acres.

Cimarex requests horizontal rules in order to promote the efficient and effective development of the remaining hydrocarbons. The proposed 467'/933' well spacing and 320 acre oil units with optional 40 acre density will allow for future development in the Phantom (Wolfcamp) Field. Cimarex is proposing to drill horizontal wells and requests that a field rule be adopted which includes language relevant to the measurement of distances to lease lines for horizontal drainhole wells. Cimarex's proposed rule specifies that, for purposes of lease line and between-well spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well. Similar rules have been adopted in other tight reservoirs, including the Barnett Shale and Cotton Valley Sand fields.

The proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 467 feet to a lease line, as long as no take-point is closer than 467 feet to any lease line. Horizontal drainhole length on a lease is then maximized, resulting in the additional recovery of gas. For purposes of the assignment of additional acreage, it is proposed that the distance between the first and last take-point in a horizontal well be used and that acreage be assigned using the following table that limits the maximum amount of acreage assigned to each horizontal lateral well to 640 acres plus a 10% tolerance or 704 acres.

Horizontal Drainhole Length, feet	Maximum Proration Unit Size, acres
0' - 1,500'	320
1,500' - 3,000'	480
3,000' - 4,500'	640
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The designated interval includes the entire Bone Spring formation, which consists of several separate sand members. The measured bottomhole pressure is 7,260 psig with a measured bottomhole temperature of 165 degree F. The oil reservoir is under-saturated

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and over pressured, as the calculated bubble point is only 3,616 psig. The primary drive mechanism is a solution gas drive. Cimarex submitted a table showing that the horizontal wells produce up to 17,000 BO during drilling operations and exhibit high initial potentials of up to 1,500 BOPD. The wells are not rate sensitive, as Cimarex submitted well test and production data from five wells demonstrating little variance from the average field gas-oil ratio of 1,250 standard cubic feet per barrel.

There is no yardstick allowable for wells on 320 acre oil units. To account for the high initial production rates while drilling and eliminate future cancellation of overproduction hearings, Cimarex requests a Top Allowable of 3.0 BO per oil unit acre or 960 BOPD for wells on 320 acre density be approved for the Phantom (Wolfcamp) Field.

Cimarex also requests that all overproduction in the field be canceled.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice and no protests were received.
2. The Phantom (Wolfcamp) Field was discovered in 1983 at a depth of 11,002 feet. Temporary Field Rules currently provide for 467'-933' well spacing and 320 acre oil units with optional 40 acre density.
3. There are six oil wells carried on the proration schedule and four of the wells are horizontal drainhole wells. The two existing vertical wells in the field are marginal producers, each producing less than 5 BOPD.
4. Cimarex is redeveloping the Phantom (Wolfcamp) Field by drilling additional horizontal wells. Although only four horizontal wells are listed on the proration schedule, Cimarex has many other wells on production and in various stages of drilling and completion.
5. Adoption of 320 acre oil units with optional 40 acre density and horizontal rules for the subject field are appropriate.
 - a. Development of the Wolfcamp/Bone Spring formation with horizontal wellbores is relatively new in this area.
 - b. A drainage area calculation for one of the best vertical wells in the field area indicates the well will drain 291 acres.
 - c. Drainage area calculations for two of the horizontal lateral wells indicate the wells will drain between 520 and 581 acres.

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- d. The War-Wink, S. (Wolfcamp) Field and the Two Georges (Bone Spring) Field are currently being redeveloped with horizontal wells and both produce from an interval correlative to the Phantom (Wolfcamp) Field.
6. 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. The Wolfcamp/Bone Spring is a tight formation and is not commercially productive unless fracture-stimulated.
 - b. A take-point in a horizontal well in this field may be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
 - c. Adoption of the proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 467 feet to a lease line, as long as no take-point is closer than 467 feet to any lease line.
 - d. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.
 7. For purposes of assignment of additional acreage pursuant to the table shown in the Final Order, the distance between the first and last take-points in a horizontal well should be used.
 8. Producing wells in the Phantom (Wolfcamp) Field at rates up to 3.0 BO per oil unit acre will not cause waste.

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. Amending the Field Rules for the Phantom (Wolfcamp) Field is necessary to prevent waste, protect correlative rights and promote development of the field.

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4. Approval of a Top Allowable of 3.0 BO per oil unit acre and cancellation of overproduction in the Phantom (Wolfcamp) Field will not cause waste and will not harm correlative rights.

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiner recommends that the Commission amend the Field Rules for the Phantom (Wolfcamp) Field, approve a Top Allowable of 3.0 BO per oil unit acre and cancel all of the field over production.

Respectfully submitted,

Richard D. Atkins, P.E.
Technical Examiner