
THE APPLICATION OF ANADARKO PETROLEUM CORPORATION FOR A NEW FIELD DESIGNATION AND TEMPORARY RULES FOR THE (PROPOSED) TENNESSEE COLONY (COTTON VALLEY-BOSSIER) FIELD, ANDERSON COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: August 12, 2002

Hearing held: September 13, 2002

Appearances

Ana Maria Marsland-Giffith	Representing
C.M. Stephens, Jr.	Anadarko Petroleum Corporation
Kirk Chatawanich	

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Anadarko Petroleum Corp. is seeking to have its Gregory "A" Lease Well No. 1 designated as the discovery well for the proposed Tennessee Colony (Cotton Valley-Bossier) Field. Anadarko requested the following rules for the new field:

1. Designated interval between 13,010 feet and 17,515 feet as shown on the log of the Anadarko Petroleum Corp. Gregory "A" Lease Well No. 1;
2. Well spacing of 467-1200 feet;
3. 640 acre gas proration units with 40-acre optional units; and
4. allocation based 95% on deliverability and 5% per well.

The examiner recommends that Anadarko wait until it has more evidence before spacing and density rules are adopted. Anadarko does not consider this to be an adverse recommendation.

DISCUSSION OF THE EVIDENCE

The Gregory "A" Lease Well No. 1 was drilled in May of 2002, and perforated in the York sandstone, of the Bossier Formation, between 16,575' and 16,805'. There are no other Cotton Valley or Bossier wells within 2-1/2 miles of the discovery well. The highest test rate was 7608 MCF/D and the bottom-hole pressure was 13,630 psi, which is virgin pressure.

The top of the proposed designated interval (13,010 feet) in the discovery well is the top of the Cotton Valley sandstone and the base (17,515 feet) is the base of the Bossier/top of the underlying

Cotton Valley limestone. There are several potentially productive sandstone lenses between the top of the Cotton Valley and the York. The top of the Bossier sandstone is at 15,740' in this well.

Anadarko believes the overlying Cotton Valley sandstones can be developed at the same time as the sandstones in the Bossier Formation. Cotton Valley sandstones and Bossier sandstones are similar and developing them at the same time will lower their economic limit. The Gregory "A" Lease Well No. 1 produced 525 MMCF between May 12 and September 11, 2002. Daily production has already declined from 9 MMCF to 1500 MCF.

The Cotton Valley/Bossier sequence is a thick series of sandstones and shales. There are several regional correlation markers within the sequence, but the individual sandstones do not correlate easily from well to well. The basal rocks in the series were deposited in the distal area of a prograding deltaic sequence. Later, deltas built out in an erratic, sawtooth pattern over the distal shales. The shallowest sandstones were deposited in a mostly fluvial environment.

Based on Anadarko's experience with Cotton Valley and Bossier wells, the average ultimate recovery from a Bossier-only well is 1.6 BCF over 15 years. If the well is recompleted to the Cotton Valley when it reaches a rate of 150 MCF/D, the total production is expected to be 2.3 BCF. However, Bossier completions usually experience liquid loading after five years and the Bossier may be abandoned prematurely when the well is recompleted to the Cotton Valley. Anadarko calculated that downhole commingling the Cotton Valley and Bossier from the beginning will increase the average recovery to 3 BCF.

Anadarko made studies of scaling that might result from commingling the water from the various fields to be consolidated. These studies show that water and hydrocarbon liquids produced from the Cotton Valley sandstones and Bossier sandstones are compatible.

FINDINGS OF FACT

1. Notice of this hearing was given to all offset operators and unleased mineral interest owners to the discovery tract, on August 21, 2002.
2. The Anadarko Gregory "A" Lease Well No. 1 was drilled in May of 2002, and perforated in the York sandstone, of the Bossier Formation, between 16,575' and 16,805'.
3. There are no other Cotton Valley or Bossier wells within 2-1/2 miles of the discovery well.
4. The highest test rate was 7608 MCF/D and the bottom-hole pressure was 13,630 psi, which is virgin pressure.
5. There are several potentially productive sandstone lenses between the top of the Cotton Valley and the York, in the Gregory "A" No. 1. The top of the Bossier sandstone is at 15,740' in this well.
6. The top of the proposed designated interval (13,010 feet) in the discovery well is the top of the Cotton Valley sandstone and the base (17,515 feet) is the base of the Bossier/top of the underlying Cotton Valley limestone.

7. Cumulative production from the Gregory "A" Lease Well No. 1 is 525 MMCF, and daily production has already declined from 9 MMCF to 1500 MCF.
8. The Cotton Valley and Bossier Formations can be produced economically, and without causing waste, if consolidated into a single field.
 - a. Studies of possible scaling due to downhole commingling of production from the Cotton Valley and Bossier sandstones indicate that fluids from these two intervals can be combined safely.
 - b. The average production from a downhole-commingled well is expected to be 3 BCF while the most optimistic estimate for a well completed sequentially in the Bossier and then the Cotton Valley is 2.3 BCF.
9. Allocation based 95% on deliverability and 5% per well which satisfy statutory requirements for fields with multiple, lenticular reservoirs.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. Designation of the Anadarko Petroleum Corporation Gregory "A" Lease Well No. 1 as a new field and adoption of the proposed designated interval and allocation formula will prevent waste and protect correlative rights, while encouraging conservation.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the Anadarko Petroleum Corporation Gregory "A" Lease Well No. 1 be designated as the discovery well of a new field to be known as the Tennessee Colony (Cotton Valley-Bossier) Field. The proposed designated interval and two-factor allocation formula should be adopted.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: October 21, 2002