

September 17, 2002

OIL AND GAS DOCKET NO. 06-0231335

THE APPLICATION OF RME PETROLEUM COMPANY TO PERMANENTLY CLASSIFY THE ANGELINA A-19 LEASE WELL NO. 1 AS A GAS WELL, BROOKELAND (AUSTIN CHALK 8800) FIELD, JASPER COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: May 3, 2002

Hearing held: September 13, 2002

Appearances

Ana Maria Marsland-Griffith
Dustin Mark Faulkner

Representing
RME Petroleum Company

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

RME Petroleum is seeking to have its Angelina A-19 Lease Well No. 1 in the Brookeland (Austin Chalk 8800) Field permanently classified as a gas well. RME would also like to have the well's overproduction canceled.

DISCUSSION OF THE EVIDENCE

The Brookeland (Austin Chalk 8800) Field is an associated gas and oil field formed in 1993 by the consolidation of several fields. Allowables are assigned under Statewide Rule 49(b). The field covers several counties and Angelina A-19 No. 1 is located along the western edge of the. Most of the wells have horizontal laterals and the Angelina A-19 No. 1 extends 7789' in a north-northwest to south-southeast direction. This well was completed at about 10,450' on July 5, 2000. Its initial test rate was 371 MCF/D, with a gas/liquid ratio of 5797 cubic feet per barrel. It encountered a bottom-hole reservoir pressure of 5077 psia, for a gradient of 0.496 psi per foot of depth.

A fluid sample, collected July 28, 2000, was recombined at initial reservoir temperature (260EF) and pressure, and the recombined fluid was evaluated at various pressures. The reservoir fluid was single phase gas until the reservoir pressure reached 4216 psig (the retrograde dew point pressure), when small amounts of liquid began to condense from the gas. The highest percentage of liquid in the reservoir, 7.2%, would be reached when the bottomhole pressure declined to 1500 psi.

Based on the PVT data, the Angelina A-19 Well No. 1 was classified as a gas well, subject to review by the Commission before December 12, 2001. On May 1, 2002, Commission staff notified RME that the well would be reclassified as an oil well. The bottomhole pressure had declined to 2110 psi and the PVT analysis showed there would be less than 100,000 cubic feet of gas per barrel of liquid

in the reservoir. RME requested this hearing in order to have its well permanently classified as gas-producing.

It is widely accepted that oil in a reservoir is essentially immobile until it reaches a saturation of 10 to 20%¹. RME believes its well should be permanently classified as a gas well because the small volume of liquid in the reservoir below approximately 4216 psig is not mobile and will not be recovered as liquid.

Statewide Rule 79 defines a gas well as:

....a well which produces hydrocarbon liquids, a part of which is formed by a condensation from a gas phase and a part of which is crude petroleum oil, shall be classified as a gas well unless there is produced one barrel or more of crude petroleum oil per 100,000 cubic feet of natural gas; and that the term "crude petroleum oil" shall not be construed to mean any liquid hydrocarbon mixture or portion thereof which is not in the liquid phase in the reservoir, removed from the reservoir in such liquid phase, and obtained at the surface as such.

RME believes that because the liquid hydrocarbons in the reservoir are immobile, the liquid produced at the surface does not meet the definition of 'crude petroleum oil'. Instead, the produced liquid is a product of condensation and should not be used as a basis for classification of the wells as oil wells.

RME has also requested cancellation of overproduction. Since October, 2000, the gas/liquid ratio has been between 10,000 and 12,500 cubic feet per barrel. Gas production has declined to 14 MMCF per month and oil production is less than 30 barrels per day. The well has had no gas allowable during 2002, and accumulated 103 MMCF of overproduction through August 1, 2002. If the well is shut-in to make up overproduction, it is subject to loading with water and may be difficult to return to production.

EXAMINER'S OPINION

The examiner recommends that the application be approved for the Angelina A-19 Well No. 1 in the Brookeland (Austin Chalk 8800) Field. This is a retrograde condensate reservoir, which was initially a single-phase gas reservoir. At some time during the life of the field, liquid hydrocarbons will exist in the reservoir at a ratio of less than 100,000 cubic feet per barrel. However, the liquid hydrocarbons will be present at a maximum volume less than 10% of the hydrocarbon pore space. Most or all of this volume is immobile, according to published literature which states that liquid saturations must be in the range of 10 to 20% before the hydrocarbon liquids in the reservoir become mobile. Therefore, any liquid hydrocarbons produced at the surface have condensed from the gas and do not meet the statutory definition of crude petroleum oil. The condensed liquids should not be considered in determining the gas-oil ratio because the liquids produced at the surface are not crude petroleum oil. The Angelina A-19 Well No. 1 should be permanently classified as a gas well.

FINDINGS OF FACT

¹ Craft and Hawkins, 1954, *Applied Petroleum Reservoir Engineering*

1. Notice of this hearing was given to all operators and interest owners in the Brookeland (Austin Chalk, 8800) Field on August 21, 2002.
2. The Brookeland (Austin Chalk 8800) Field was formed in 1993, and is classified as an associated oil and gas field with allowables determined under Statewide Rule 49(b).
3. The Angelina A-19 Lease Well No. 1 produces from a retrograde condensate reservoir and virtually all the liquids produced by this well are the product of condensation after the hydrocarbons left the reservoir.
 - a. This well was completed as a horizontal lateral at about 10,450' in the Austin Chalk Formation.
 - b. It was tested July 5, 2000, at a maximum rate of 371 MCF/D, with a gas/liquid ratio of 5797 cubic feet per barrel.
 - c. The initial reservoir pressure was 5077 psia, and the flowing wellhead pressure was 990 psia.
 - d. The fluid in the Austin Chalk was a single-phase gas until the reservoir pressure reached 4216 psig (the retrograde dew point pressure), when small amounts of liquid began to condense from the gas.
 - e. The highest percentage of liquid in the reservoir, 7.2%, will be reached when the bottomhole pressure declines to 1500 psi.
 - f. The bottom-hole pressure was reported at 2110 psi on December 23, 2001.
4. The maximum percentage of hydrocarbon pore space occupied by retrograde liquid will be less than 10%, and the liquid will not be mobile.
5. All of the liquid hydrocarbons produced at the surface from this well will be the product of condensation and should not be classified as crude petroleum oil.
6. Because little or no crude petroleum oil will be produced, the Angelina A-19 Well No. 1 should be classified as a gas well.
7. No gas allowables were assigned during 2002, and the well has 103 MMCF of overproduction.
8. The overproduction for RME's Angelina A-19 Well No. 1 is due to incorrect reclassification as an oil well, and cancellation of this well's overproduction will not harm correlative rights.

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. The RME Petroleum Company Angelina A-19 Lease Well No. 1, in the Brookeland (Austin Chalk 8800) Field, is completed in a gas reservoir based on the definition of gas wells pursuant to Statewide Rule 79(a)(11)(C).

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the RME Petroleum Company Angelina A-19 Lease Well No. 1, in the Brookeland (Austin Chalk 8800) Field, be permanently classified as a gas well, and that its overproduction for 2002 be canceled.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: October 8, 2002