OIL AND GAS DOCKET NO. 09-0228612

THE APPLICATION OF MITCHELL ENERGY COMPANY FOR EXCEPTION TO STATEWIDE RULE 23(a)(2) FOR VARIOUS LEASES IN BOONESVILLE (BEND CONGL., GAS) FIELD, WISE COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: June 8, 2001
Hearing held: September 13, 2001

Appearances

	Representing
Brian Sullivan	Mitchell Energy Company
H. Lee Mathews	

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Mitchell Energy Company wants an exception to Statewide Rule 23(a)(2) to allow it to pull up to 25 inches of mercury vacuum in order to recover additional gas on 22 wells in the Boonesville (Bend Congl., Gas) Field, Wise County, Texas. Rule 23(a)(2) states:

> In a field which is depleted or practically depleted vacuum may be used, but no vacuum pump shall be installed or used without a permit from the Commission obtained upon application after notice to adjacent lease owners and operators and a public hearing on such application.

Mitchell is also requesting that a field rule be adopted allowing operators of wells in the Boonesville (Bend Congl., Gas) Field to receive administrative exceptions to Rule 23 without a hearing.

DISCUSSION OF THE EVIDENCE

The Boonesville (Bend Congl., Gas) Field was discovered in 1945 and has produced 3.1 TCF of gas and 17 MMBC. Mitchell operates 2000 of the 3500 wells in the field. Most of the wells in the field are near depletion and the few new completions in the past several years have encountered depleted pressure.

The typical well in the subject field is perforated in several separate sandstones, each of which is usually less than 20 feet thick. Permeability is good, between 1 and 50 md, the porosity is 12 to 15%, and water saturation varies between 32 and 42%. This application covers the 22 gas wells shown on the attached list. These are some of the better wells that Mitchell operates and therefor are assumed to have the best permeability. Their cumulative production has been 70.8 BCF, and all have reached the late stage of primary production. During March of 2001, two of the wells averaged 100 and 160 MCF/D respectively, while the daily average of the other 20 wells was only 38 MCF.

The reservoir pressure was 1535 psi initially, but declined to less than 200 psi by 1993. Current reservoir pressure is probably less than 100 psi, and Mitchell believes that production under vacuum from various wells may be able to reduce the reservoir pressure to 50 psi before abandonment. The average well produces about 10 barrels of condensate and 10 barrels of water per million cubic feet of gas. Low reservoir pressure has caused liquid loading problems and most wells have had plunger lift or a beam pump installed.

Mitchell presented evidence on three of its wells to show that their production will benefit from reducing the wellhead pressure below zero. In 1999, the Loyd A. Hill No. 1, whose cumulative production had been 4.2 BCF, was producing only 28 MCF/D. A wellhead compressor was installed that reduced the wellhead pressure from 88 psi to less than 20 psi, and the gas rate increased to 350 MCF/D. Current production is back down to 160 MCF/D as the well is again loading with liquid. Mitchell believes that a vacuum could increase the ultimate recovery from this well by 50 to 200 MMCF over a two-year period.

Reducing wellhead pressure from 50-60 psi to 10-20 psi in the Stella Young GU A No. 3 increased production from 80 MCF/D to about 170 MCF/D. Mitchell believes this well will produce an additional 50 to 100 MMCF under vacuum pressure. Mitchell's Horace Ardinger No. 1 also showed an increase in production when wellhead pressure was reduced. Mitchell believes that this well's production can be increased to 250 to 300 MCF/D if a vacuum is used.

Statewide Rule 23 allows operators to pull up to 2 inches of mercury vacuum. (Atmospheric pressure is 14.7 psi which raises a column of mercury 30 inches.) Mitchell seeks authority to pull up to 25 inches of mercury vacuum. If this application is granted, the operators of all wells in the Boonesville (Bend Congl., Gas) Field will be able to apply for and receive exceptions to Statewide Rule 23 without notice or hearing. All operators in the field received notice of this application and there were no objections to this proposed field rule. .

FINDINGS OF FACT

1. Notice of this hearing was mailed to all operators in the Boonesville (Bend Congl., Gas) Field on August 28, 2001, and no protests were received.

2. A waiver was received from Carter Energy Company, the only operator who did not receive the mailed notice of hearing.

3. There are twenty-two gas wells in this application, all of which have reached the late stage of primary production.

   a. The cumulative production of these wells is 70.8 BCF.

   b. One of the wells averages 160 MCF/D, one averages 100 MCF/D, and the average daily production of the other twenty wells is 38 MCF/D.

4. The initial reservoir pressure of 1535 psi declined to less than 200 psi by 1993.

5. The low reservoir pressure causes wells to load with liquid unless artificial lift is used.

6. Use of a vacuum on various wells in the field should be able to reduce the reservoir pressure to

less than 100 psi before the wells become uneconomic.

7. Three wells have already showed that reducing wellhead pressure can allow nearly depleted wells to increase their daily production to 250-300 MCF/D for a year or two.

8. Pulling up to 25 inches of mercury vacuum will increase the incremental recovery from various wells by 50 to 300 MMCF of gas.

9. The wells of all operators in the field are nearing their economic limits and most of them may be able to benefit from using a vacuum.

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. Allowing Mitchell to pull up to 25 inches of mercury vacuum on the applied-for leases will prevent waste and protect correlative rights.

4. The operators of all wells in the Boonesville (Bend Congl., Gas) Field may be able to benefit from administrative approval of exceptions to Statewide Rule 23.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that Mitchell Energy Company be allowed to pull vacuums of up to 25 inches of mercury vacuum on the applied-for leases in Boonesville (Bend Congl., Gas) Field. The operators of the other wells in the field should be able to receive administrative approval of exceptions to Statewide Rule 23 without notice and hearing.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

LEASE NAME	WELL NOS.	LEASE NUMBER
Horace Ardinger	Well No. 1	No. 028546
Pete Erwin	Well Nos 1 & 2	No. 029216
L. W. Hill	Well No. 2	No. 091599
Loyd Hill "A"	Well Nos. 1 & 2	Nos. 029224 & 113529
Henry Horton	Well Nos. 1 & 2	Nos. 028683 & 117062
H. S. Jones	Well No. 1	No. 029225
J. D. Karnes Unit	Well No. 4	No. 028708
Emma Krell	Well No. 3	No. 115760
M. S. McBride "B"	Well Nos. 1, 2, & 3	Nos. 029229, 082241, & 146733
Bula Patterson	Well Nos. 1 & 2	Nos. 029232 & 078794
Albert Pavillard	Well No. 1	No. 035936
S. F. Peek GU "A"	Well No. 2	No. 028775
J. B. Remmele Unit	Well Nos. 1 & 2	Nos. 029236 & 075349

J. L. Womack "A" Well No 1 No. 029240
Stella Young GU "A" Well No. 3 No. 054267