

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

**CASE NO. 11600
ORDER NO. R-10686**

**APPLICATION OF BURLINGTON RESOURCES
OIL & GAS COMPANY FOR THE ESTABLISHMENT
OF A DOWNHOLE COMMINGLING "REFERENCE
CASE" PURSUANT TO DIVISION RULE 303.E AND
THE ADOPTION OF SPECIAL ADMINISTRATIVE
RULES THEREFOR, SAN JUAN AND RIO ARRIBA
COUNTIES, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on August 22, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 18th day of October, 1996, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Burlington Resources Oil & Gas Company (Burlington), pursuant to the provisions of Division Rule 303.E., seeks to establish a downhole commingling "reference case" to provide exceptions for (a) marginal economic criteria and (b) pressure criteria on a pool-wide basis in the Dakota, Mesaverde and Pictured Cliffs formations within the San Juan Basin, San Juan and Rio Arriba Counties, New Mexico.

(3) Division Rule No. 303.E., amended by Order No. R-10470-A, currently states:

"If sufficient data exists on a lease, pool, formation, geographic area, etc., so as to render it unnecessary to repeatedly provide such data on Form C-107-A, an operator may except any of the various criteria required under Paragraph 303.D. of this rule by establishing a "reference case". The Division, upon its own motion, or by application from an operator, may establish "reference cases" either administratively or by hearing. Upon Division approval of such "reference cases" for specific criteria, subsequent applications to downhole commingle (Form C-107-A) will be required only to cite the Division order number which established such exceptions and shall not be required to submit data for those criteria."

(4) At the time of the hearing, applicant requested that the Division take administrative notice of the record, evidence and testimony presented in Case No. 11353, presented to the Oil Conservation Commission on January 18, 1996. At this hearing, which was held to consider amendments to Division Rule No. 303.C., Burlington, then known as Meridian Oil Inc., presented extensive geologic and engineering evidence with regards to drilling economics and pressure data within the Mesaverde, Dakota and Pictured Cliffs formations in the San Juan Basin.

(5) In the absence of the establishment of a "reference case", Division Rule 303.C. and Form C-107-A require that administrative applications for downhole commingling of gas production be submitted, processed and approved on a well by well basis including submittal of the following:

- (a) a statement indicating whether the zones to be downhole commingled are marginal or non-marginal; and,
- (b) pressure data to demonstrate that the current bottomhole pressures of the highest pressured commingled zone does not exceed the original reservoir pressure of any other commingled zone in the wellbore, adjusted to a common datum.

(6) Burlington currently operates 1,582 wells in the Dakota formation, 2,163 wells in the Mesaverde formation and 2,529 wells in the Pictured Cliffs formation, all located within the San Juan Basin.

(7) With regards to the economic criteria in the Dakota, Mesaverde and Pictured Cliffs formations, the applicant presented evidence and testimony which indicates that:

- a) there are currently well over 300 commingled wells within the San Juan Basin;
- b) there are approximately 6,200 undeveloped drill blocks in the Dakota, Mesaverde and Pictured Cliffs formations within the San Juan Basin. Due to marginal reserves and economics, less than one percent of these undeveloped drill blocks are drilled by industry each year;
- c) there are approximately 1,591 undeveloped drill blocks in the Mesaverde formation within the San Juan Basin. Approximately 1.8% of these drill blocks are developed each year by industry. Average recoverable gas reserves underlying a typical undeveloped drill block in the Mesaverde formation are approximately 1,451 MMCFG. Current average production from the Mesaverde formation is approximately 138 MCFG per day. During the period from 1990-1995, approximately 175 wells were drilled as single completions in the Mesaverde formation within the San Juan Basin;
- d) there are approximately 2,364 undeveloped drill blocks in the Pictured Cliffs formation within the San Juan Basin. Approximately 0.6% of these drill blocks are developed each year by industry. Average recoverable gas reserves underlying a typical undeveloped drill block in the Pictured Cliffs formation are approximately 314 MMCFG. Current average production from the Pictured Cliffs formation is approximately 45 MCFG per day. During the period from 1990-1995, approximately 81 wells were drilled as single completions in the Pictured Cliffs formation within the San Juan Basin;
- e) there are approximately 2,246 undeveloped drill blocks in the Dakota formation within the San Juan Basin. Approximately 0.5% of these drill blocks are developed each year by industry. Average recoverable gas reserves underlying a typical undeveloped drill block in the Dakota formation are approximately 729 MMCFG. Current average production from the Dakota formation is approximately 85 MCFG per day. During the period from 1990-1995, approximately 63 wells were drilled as single completions in the Dakota formation within the San Juan Basin.

(8) Further economic data presented by the applicant indicates that neither a typical undeveloped Pictured Cliffs or Dakota drill block contains sufficient gas reserves to economically justify drilling stand-alone wells.

(9) The Mesaverde formation, according to applicant's evidence and testimony, is the only formation which currently contains sufficient reservoir pressure and recoverable gas reserves so as to economically justify drilling stand alone wells.

(10) Applicant testified that at this point in the producing life of the Dakota and Pictured Cliffs reservoirs, downhole commingling provides the only means whereby remaining gas reserves can be economically recovered.

(11) The evidence and testimony presented by the applicant indicates that the Pictured Cliffs and Dakota reservoirs within the San Juan Basin are generally marginally productive, however, it is impractical to establish a marginal economic reference case within an area as large as the San Juan Basin for the following reasons:

- a) a reference case such as proposed would essentially qualify any well within the San Juan Basin for downhole commingling regardless of current or projected producing rates and projected gas recoveries;
- b) due to the expanse and areal extent of the Pictured Cliffs and Dakota reservoirs within the San Juan Basin, there certainly exist wells whose current producing capability or projected gas recovery are such that these wells would normally not be classified as "marginal" wells;
- c) due to the expanse and areal extent of the Pictured Cliffs and Dakota reservoirs within the San Juan Basin, there certainly exists the potential for drilling a well whose productive capability or projected gas recovery are such that these wells would normally not be classified or defined as "marginal";
- d) drilling and producing economics vary from operator to operator in the San Juan Basin; and,
- e) the information required by Division Form C-107-A to demonstrate whether or not a well is marginal does not represent an unreasonable or excessive burden on industry.

(12) It is the Division's position that "reference cases" presented on a smaller scale (i.e. companion Division Case No. 11601) are far more reasonable and more likely to meet criteria for approval than the immediate case.

(13) In support of its request to establish a “reference case” for pressure criteria, the applicant presented original and last shut-in bottomhole pressure maps for the Pictured Cliffs, Mesaverde and Dakota formations encompassing portions of San Juan and Rio Arriba Counties, New Mexico. The information contained on these maps is summarized as follows:

<u>FORMATION</u>	<u>MAPPED AREA (TOWNSHIPS)</u>	<u>ORIGINAL SIBHP RANGE (PSI)</u>	<u>LAST SIBHP RANGE (PSI)</u>
Pictured Cliffs	~ 36	404-1,396	90-932
Mesaverde	~ 45	903-2,088	172-915
Dakota	~ 48	1,890-3,526	214-1,308

(14) The areas mapped by the applicant represent substantial portions of, but not all of the Pictured Cliffs, Mesaverde and Dakota reservoirs within the San Juan Basin.

(15) The expanse and areal extent of the Pictured Cliffs, Dakota and Mesaverde reservoirs within the San Juan Basin is such that there are certainly areas that where applicant’s pressure data and maps do not encompass.

(16) The pressure data submitted by the applicant indicates that there are still areas within the San Juan Basin where the current bottomhole pressure of a given formation can exceed the original reservoir pressure of other formation(s) within a wellbore proposed to be downhole commingled.

(17) Such a situation disqualifies a well for downhole commingling.

(18) It is essential that the Division have all the necessary information to determine whether a well qualifies for downhole commingling pursuant to the pressure requirements of 303.C.(b)(ii).

(19) Presenting an estimated or measured original bottomhole pressure for any given formation within a proposed downhole commingled wellbore does not represent a severe or unreasonable burden on industry.

(20) Applicant's request to establish a "reference case" for marginal economic criteria and pressure criteria on a pool-wide basis for downhole commingling of Pictured Cliffs, Dakota, and Mesaverde gas production within the San Juan Basin should be denied.

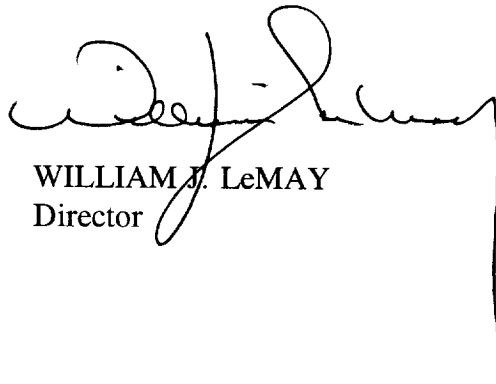
IT IS THEREFORE ORDERED THAT:

(1) The application of Burlington Resources Oil & Gas Company, pursuant to the provisions of Division Rule 303.E., to establish a downhole commingling "reference case" to provide exceptions for (a) marginal economic criteria and (b) pressure criteria on a pool-wide basis in the Dakota, Mesaverde and Pictured Cliffs formations within the San Juan Basin, San Juan and Rio Arriba Counties, New Mexico, is hereby denied.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LeMAY
Director

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