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. 12509
ORDER NO. R-11532

APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY FOR APPROVAL OF A PILOT PROJECT INCLUDING UNORTHODOX WELL LOCATIONS AND AN EXCEPTION FROM THE SPECIAL RULES AND REGULATIONS FOR THE BASIN-DAKOTA GAS POOL FOR PURPOSES OF ESTABLISHING A PILOT INFILL DRILLING PROGRAM WITHIN ITS CULPEPPER MARTIN PROJECT AREA, CONSISTING OF SECTIONS 1-3, 10-15 AND 22-24, TOWNSHIP 31 NORTH, RANGE 12 WEST, WHEREBY UP TO FOUR WELLS MAY BE DRILLED ON A STANDARD GAS PRORATION UNIT TO DETERMINE PROPER WELL DENSITY FOR DAKOTA WELLS, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 19 and November 16, 2000, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 16th day of February, 2001, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) Cases No. 12508 and 12509 were consolidated at the October 19th hearing for the purpose of testimony.

(3) The applicant, Burlington Resources Oil & Gas Company ("Burlington"), seeks approval to conduct a pilot infill drilling program in the Basin-Dakota Gas Pool within its proposed Culpepper Martin Project Area, San Juan County, New Mexico, whereby up to four wells may be drilled on a standard gas proration unit ("GPU") in order to determine proper well density.

(4) The applicant further seeks authority to drill the following-described six initial infill wells, all located at unorthodox gas well locations within Township 31 North, Range 12 West:

Well Name	Well Location
Davis No. 7F	180' FNL & 2465' FWL (Unit C) Section 11
Davis No. 8R	2270' FSL & 2140' FEL (Unit J) Section 11
East No. 7F	1740' FNL & 2395' FWL (Unit F) Section 14
Grenier No. 11F	965' FNL & 500' FWL (Unit D) Section 13
Harper No. 2F	2020' FSL & 1585' FEL (Unit J) Section 14
Richardson No. 8F	2510' FSL & 1915' FEL (Unit J) Section 10

(5) The applicant further seeks:

(a) authority to expand the pilot infill drilling project by drilling additional infill wells within the Culpepper Martin area at orthodox and unorthodox locations provided that: i) no more than two wells shall be drilled on each quarter section within a standard 320-acre GPU; and ii) such wells are located no closer than 10 feet to the outer boundary of the proration unit nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary;

(b) to establish a ½-mile "buffer zone" within the outer boundary of the Culpepper Martin area within which standard well density for the Basin-Dakota Gas Pool shall apply in order to protect the correlative rights of offset operators; and

(c) an exception to the well location requirements for the Basin-Dakota Gas Pool to allow the drilling of Dakota gas wells within the proposed "buffer zone" at locations no closer than 660 feet to the outer boundary of the Culpepper Martin area nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

(6) At the hearing, the applicant testified that the well location for the East Well No. 7F has been amended to 1510 feet from the North line and 2100 feet from the West line (Unit F) of Section 14.

(7) BP Amoco, Williams Production Company, Conoco Inc., and the United States Bureau of Land Management ("BLM") appeared at the hearing generally in support of the application.

(8) In companion Case No. 12508, Burlington seeks approval for a similar Dakota pilot infill drilling project within its San Juan 27-5 Unit area located in Township 27 North, Range 5 West, NMPM, Rio Arriba County, New Mexico.

(9) By Order No. R-1670-V issued in Case No. 6533 on May 22, 1979, the Division approved infill drilling within the Basin-Dakota Gas Pool whereby up to two wells may be drilled on a standard 320-acre GPU.

(10) The Basin-Dakota Gas Pool is currently governed by special rules established by Division Order No. R-10987, as amended, that require:

(a) standard 320-acre gas spacing and proration units;

(b) the initial well on a GPU to be located no closer than 660 feet to any outer boundary of the quarter section on which the well is located and no closer than 10 feet to any quarter-quarter section line or subdivision inner boundary; and

(c) the infill well drilled on a GPU to be located in the quarter section of the GPU not containing a Dakota well and to be located with respect to the GPU boundaries as described in the preceding paragraph.

(11) Burlington is the operator of all Basin-Dakota Gas Pool GPU's within the Culpepper Martin area, which comprises 7,414 acres, more or less, consisting of Sections 1 through 3, 10 through 15, and 22 through 24, all in Township 31 North, Range 12 West. The proposed project area contains state, federal and fee oil and gas leases.

(12) The working, royalty and overriding royalty interest ownership within the Culpepper Martin area is not uniform throughout.

(13) The evidence and testimony presented indicates that Burlington has undertaken a study to analyze the drainage efficiency of Dakota gas wells in the Culpepper Martin area and generally in the San Juan Basin.

(14) The applicant presented geologic evidence that demonstrates:

(a) the "Two Wells," "Paguate," "Upper Cubero," and "Lower Cubero" are the four distinct producing intervals within the Basin-Dakota Gas Pool. These four intervals vary in their continuity within the pool;

(b) within the Culpepper Martin area, the "Two Wells," "Paguate," and "Lower Cubero" are present with the gas production attributed to all three of these intervals;

(c) differences in ultimate gas recoveries within the Culpepper Martin area cannot be attributed to differences in reservoir thickness and structure, or matrix porosity and permeability;

(d) the presence and density of natural fractures in the Dakota formation appear to account for the differences between areas of high and low gas recoveries; and

(e) the geologic characteristics of the Dakota formation within the Culpepper Martin area are substantially different from those within the proposed San Juan 27-5 Unit area.

(15) Utilizing geologic and engineering data, Burlington has constructed various maps that depict: i) bulk volume hydrocarbon feet for the four producing intervals within the Basin-Dakota Gas Pool; ii) original gas in place ("OGIP") for the Basin-Dakota Gas Pool within the San Juan Basin; iii) estimated ultimate gas recovery ("EUR") for the Basin-Dakota Gas Pool within the San Juan Basin; iv) initial shut-in pressure ("ISIP") for 160-acre Dakota infill wells; and v) EUR ratio--160-acre infill well EUR/parent well EUR.

(16) Burlington's geologic/engineering maps demonstrate that:

(a) OGIP varies considerably in the Dakota formation across the San Juan Basin;

(b) the ISIP for 160-acre infill wells varies considerably in the Dakota formation, and, within the Culpepper Martin area, the ISIP of 160-acre infill wells is approximately 42% of the initial Dakota reservoir pressure. These data demonstrate that the initial or "parent" wells were not efficiently draining the GPUs;

(c) there are areas in the San Juan Basin where the 160-acre infill wells are estimated to recover at least as much gas as the parent wells, again demonstrating that in certain areas of the San Juan Basin, the Dakota formation exhibits poor drainage characteristics;

(d) within the Culpepper Martin area, the initial and 160-acre infill wells are estimated to recover approximately 68% of the OGIP underlying their GPUs; and

(e) the remaining 32% of the OGIP can only be recovered by increasing the well density.

(17) Burlington has conducted a reservoir simulation study on that portion of the Culpepper Martin area where it proposes to drill the six initial infill wells. This area encompasses 7,700 acres and contains 42 existing producing Dakota wells. The results of this reservoir simulation study demonstrate that:

(a) drilling the proposed six wells will result in the recovery of 1.4 BCF of new gas reserves that would otherwise not be recovered by the existing wells;

(b) these additional gas reserves can be economically recovered by drilling new "stand alone" Dakota wells; and

(c) the pilot wells are necessary in order to obtain pressure data that will be used to further refine the simulation model. The additional data obtained from the pilot project will allow Burlington to more accurately predict the proper well density and well location requirements for this area of the Basin-Dakota Gas Pool.

(18) The proposed unorthodox gas well locations are necessitated by a combination of topographic, engineering and geologic factors.

(19) The applicant notified all working, royalty and overriding royalty interest owners in the Culpepper Martin area and all offset operators of its application in this case.

(20) By letter dated November 1, 2000, the Commissioner of Public Lands for the State of New Mexico ("Commissioner") advised Burlington that the proposed Davis Well No. 7F encroached upon state trust lands located in Section 2, Township 31 North, Range 12 West, and that the Commissioner recommended an alternative well location be sought in order to avoid any correlative rights issues.

(21) No other offset operator or interest owner appeared at the hearing in opposition to the application.

(22) Burlington should seek an alternative well location for its Davis Well No. 7F in order to avoid any correlative rights violations. Accordingly, Burlington's request to drill its Davis Well No. 7F at an unorthodox location 180 feet from the North line and 2465 feet from the West line (Unit C) of Section 11, Township 31 North, Range 12 West, should be denied.

(23) The five remaining proposed unorthodox infill well locations should be approved.

(24) Preliminary geologic and engineering data indicate that the proposed pilot infill drilling project within the Culpepper Martin area will allow the applicant the opportunity to gather additional geologic and engineering data to determine proper well density in this portion of the Basin-Dakota Gas Pool, will allow the recovery of additional gas reserves from the Culpepper Martin area that may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(25) Expansion of the pilot project by drilling additional infill wells at orthodox or unorthodox gas well locations may be approved by the Division Director only after notice and hearing; provided however that the supervisor of the Aztec District Office of the Division may approve an alternate well location for the Davis Well No. 7F if this well location protects the correlative rights of offset interest owners.

(26) A ½-mile "buffer zone" should be established within the outer boundary of the Culpepper Martin area. Within the "buffer zone," standard well density for the Basin-Dakota Gas Pool should apply.

(27) The applicant's request to amend the well location requirements for the Basin-Dakota Gas Pool within the "buffer zone" is irrelevant to this case, was not justified by the evidence presented, and should therefore be denied.

IT IS THEREFORE ORDERED THAT:

(1) Burlington is hereby authorized to conduct a pilot infill drilling project in the Basin-Dakota Gas Pool within its Culpepper Martin area, described as follows, San Juan County, New Mexico, whereby up to four wells may be drilled on a standard GPU in order to determine proper well density.

Culpepper Martin Project Area

Township 31 North, Range 12 West

Sections 1 through 3:	All
Sections 10 through 15:	All
Sections 22 through 24:	All

(2) The applicant is further authorized to drill the following-described five initial infill wells, all located at unorthodox gas well locations within Township 31 North, Range 12 West:

Well Name	Well Location
Davis No. 8R	2270' FSL & 2140' FEL (Unit J) Section 11
East No. 7F	1510' FNL & 2100' FWL (Unit F) Section 14
Grenier No. 11F	965' FNL & 500' FWL (Unit D) Section 13
Harper No. 2F	2020' FSL & 1585' FEL (Unit J) Section 14
Richardson No. 8F	2510' FSL & 1915' FEL (Unit J) Section 10

(3) The applicant's request to drill its Davis Well No. 7F at an unorthodox gas well location 180 feet from the North line and 2465 feet from the West line (Unit C) of Section 11, Township 31 North, Range 12 West, is hereby denied.

(4) Expansion of the pilot project by drilling additional infill wells at orthodox or unorthodox gas well locations may be approved by the Division Director only after notice and hearing; provided however that the supervisor of the Aztec District Office of the Division may approve an alternate well location for the Davis Well No. 7F if this well location protects the correlative rights of offset interest owners.

(5) A ½-mile "buffer zone" inside the outer boundary of the Culpepper Martin area is hereby established. Within the "buffer zone," standard well density for the Basin-Dakota Gas Pool shall apply.

(6) The applicant's request to amend the well location requirements for the Basin-Dakota Gas Pool within the "buffer zone" is hereby denied.

(7) Jurisdiction is hereby 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

LORI WROTENBERY
Director

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