

**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. 12651
ORDER NO. R-11639**

**APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY FOR
APPROVAL OF A PILOT PROJECT INCLUDING UNORTHODOX WELL
LOCATIONS AND AN EXCEPTION TO RULE 4 OF THE SPECIAL RULES AND
REGULATIONS FOR THE BASIN FRUITLAND COAL (GAS) POOL FOR
PURPOSES OF ESTABLISHING A PILOT INFILL DRILLING PROGRAM TO
DETERMINE PROPER WELL DENSITY FOR FRUITLAND COAL GAS WELLS,
SAN JUAN AND RIO ARriba COUNTIES, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on May 17, 2001, at Santa Fe, New Mexico before Examiner Michael E. Stogner.

NOW, on this 22nd day of August, 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) The Basin-Fruitland Coal (Gas) Pool is an "unprorated gas pool" not subject to Part H of the Division's statewide rules and regulations entitled "*Gas Proration and Allocation*" (Rules 601 through 605). However, the Basin-Fruitland Coal (Gas) Pool is subject to: (a) Division Rule 104.D (3), which restricts the number of producing wells within a single gas spacing unit within non-prorated pools to only one (see official notice to all operators issued by the Division Director on October 25, 1999), and which allows producing wells within this pool to produce at capacity; and (b) the "*Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool*," established by Division Order No. R-8768, as amended by Orders No. R-8768-A and R-8768-B, which rules provide for:

(i) 320-acre spacing units (Rule 4);

- (ii) wells to be located in the NE/4 or SW/4 of a single governmental section and no closer than 660 feet to the outer boundary of the spacing unit nor closer than 10 feet to any interior quarter or quarter-quarter section line or subdivision inner boundary (Rule 7); and
- (iii) infill wells only after notice and hearing (Rule 4).

(3) The applicant, Burlington Resources Oil & Gas Company ("Burlington"), pursuant to Rule 4 of the special pool rules governing the Basin Fruitland-Coal (Gas) Pool seeks approval to establish a pilot infill drilling program in Rio Arriba and San Juan Counties, New Mexico, including exceptions to the special pool rules and authorization to drill infill wells at unorthodox (off-pattern) well locations.

(4) The U. S. Bureau of Land Management, BP Amoco Production Company, Williams Production Company, and Cross Timbers Oil Company appeared in support of granting this application and no interested party appeared in opposition.

(5) Burlington proposes to drill and operate the following test producing wells at off-pattern, unorthodox locations as part of a cooperative Division/industry study of the appropriate well density for the Basin Fruitland Coal (Gas) Pool:

- (a) San Juan "28-6" Unit Well No. 418-S to be located 1065 feet from the North line and 1830 feet from the West line (Unit C) of Section 28, Township 28 North, Range 6 West, NMPM, Rio Arriba County, New Mexico, as an infill well within an existing standard 320-acre stand-up gas spacing unit comprising the W/2 of Section 28;
- (b) Turner Federal Well No. 210-S to be located 665 feet from the North line and 980 feet from the West line (Lot 4/Unit D) of Section 13, Township 30 North, Range 10 West, NMPM, San Juan County, New Mexico, as an infill well within an existing standard 316.46-acre lay-down gas spacing unit comprising Lots 1 through 8 (N/2 equivalent) of Section 13;
- (c) San Juan "28-5" Unit Well No. 201-S to be located 1980 feet from the North line and 2630 feet from the West line (Unit F) of Section 15, Township 28 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, as an infill well within an existing standard 320-acre

lay-down gas spacing unit comprising the N/2 of Section 15; and

- (d) Davis Well No. 505-S to be located 2420 feet from the South line and 660 feet from the East line (Lot 9/Unit I) of Section 12, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, as an infill well within an existing 278.78-acre stand-up gas spacing unit comprising Lots 1, 2, 7, 8, 9, 15, and 16 (E/2 equivalent) of Section 12.

(6) In addition to drilling the above-described unorthodox infill wells, Burlington seeks to drill its proposed Huerfano Unit Well No. 258-S at a standard coal gas well location 1190 feet from the North line and 840 feet from the East line (Lot 1/Unit A) of Section 36, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, as an infill well within an existing standard 300.30-acre stand-up gas spacing unit comprising Lots 1 through 4 and the E/2 E/2 (E/2 equivalent) of Section 36.

(7) By Order No. R-8768-A, dated July 16, 1991, the Division made findings based on work presented by the "Fruitland Coalbed Methane Committee" concerning the Basin-Fruitland Coal (Gas) Pool showing that one well can generally drain and effectively develop 320 acres [see Finding Paragraphs No. (6) and (7) on page 2 of Order No. R-8768-A]; however, there may be certain areas within the San Juan Basin where reservoir parameters such as porosity, permeability, coal thickness, pressure, gas content, sorption isotherm and initial gas/water saturation may exist in certain combinations such that infill drilling may be required to increase gas recovery.

(8) Testimony presented by Burlington at this hearing indicates that:

- (a) since the original spacing order for the Basin Fruitland Coal (Gas) Pool (Division Order No. R-8768) was issued in 1988, development within the pool has advanced steadily and production has matured considerably;
- (b) in 1991, the Aztec district office of the Division formed the Fruitland Coalbed Methane Committee, now designated the Fruitland Coal Gas Committee, composed of representatives of the U. S. Bureau of Land Management, Burlington, and other operators in the pool to discuss proper well density on a poolwide basis;
- (c) by April, 2001 the Fruitland Coal Gas Committee had met ten times and agreed it was timely for Burlington to proceed with its proposed

infill pilot projects; and

- (d) for each of its proposed pilot project wells, Burlington demonstrated that it had sent notice to all appropriate parties being affected and that none of the parties had objected to the program, well locations, or increased well density.

(9) Burlington presented geological and engineering evidence, which demonstrates that:

- (a) the Basin-Fruitland Coal (Gas) Pool can be subdivided into an over-pressured area, which is commonly refereed to as the "fairway," which trends northwest-southeast and splits the basin into a northeastern one-third and southwestern two-thirds, and under-pressured areas on either side of this trend;
- (b) the cumulative production from the Basin-Fruitland Coal (Gas) Pool has served to highlight the sharp contrast in characteristics of coal bed methane production between the fairway and the under-pressured areas;
- (c) producing wells within the fairway appear to be draining 320 acres under the existing well density rules of one well per 320-acre spacing unit, while wells in the under-pressured areas appear not to be adequately draining 320 acres;
- (d) most of the reservoir engineering data and well simulation information in the original pool rule cases were based upon well performance and production data in a particular area, known as Cedar Hills, within the fairway;
- (e) currently available data in the under-pressured areas is not adequate to determine whether: (i) conventional calculations of original gas in place are correct and more wells are needed; or (ii) those reserves are substantially overestimated and the current well density is adequate;
- (f) approval of the proposed pilot wells will afford an opportunity to gather the additional data and to further calibrate reservoir simulation models;

- (g) the purpose of the project will be to drill, complete, and produce for a period of 180 days certain wells in a manner similar to surrounding coal gas wells in order to adequately determine potential production differences between the coal seams encountered in the proposed pilot wells;
- (h) the stratigraphic complexity and grouping relationships observed in each pilot area will dictate the number of layers that are tested and ultimately modeled separately for coal quality, isotherm development, current levels of depletion, gas content, and productive potential;
- (i) there is a need for layered pressure evaluation, which cannot be obtained from existing wellbores;
- (j) the pilot program would consist of five different areas in the under-pressured areas of the pool with each new area to have one new pilot infill well;
- (k) four of the five pilot wells will be off-pattern in that they will be located in either the NW/4 or SE/4 of a governmental section; however, in each instance the off-pattern location was justified as being reasonable for information gathering purposes; and
- (l) reservoir simulation is necessary to justify Finding Paragraphs No. (6) and (7) of Division Order No. R-8768-A.

(10) Approval of Burlington's application will serve to provide data for reservoir engineering and geological studies for the ultimate purposes of determining proper well density within the Basin-Fruitland Coal (Gas) Pool, is in the best interest of conservation, and will serve to protect correlative rights and prevent waste.

IT IS THEREFORE ORDERED THAT:

(1) As an exception to (i) Rule 4 of the "*Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool*," established by Division Order No. R-8768, as amended by Orders No. R-8768-A and R-8768-B, and (ii) Division Rule 104.D (3), the applicant, Burlington Resources Oil & Gas Company ("Burlington"), is hereby authorized to conduct a pilot infill drilling program within the Basin-Fruitland Coal (Gas) Pool by drilling and producing the following infill coal gas wells at off-pattern unorthodox locations as part of an

on-going Division/industry study of the appropriate well density within this pool:

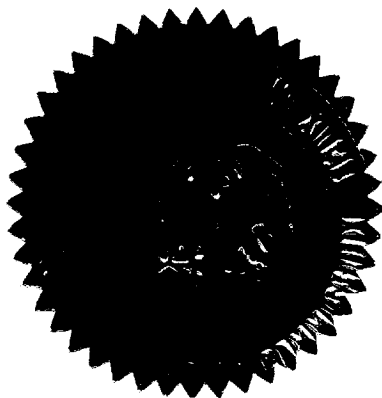
- (a) San Juan "28-6" Unit Well No. 418-S to be located 1065 feet from the North line and 1830 feet from the West line (Unit C) of Section 28, Township 28 North, Range 6 West, NMPM, Rio Arriba County, New Mexico, as an infill well within an existing standard 320-acre stand-up gas spacing unit comprising the W/2 of Section 28;
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- (d) Davis Well No. 505-S to be located 2420 feet from the South line and 660 feet from the East line (Lot 9/Unit I) of Section 12, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, as an infill well within an existing 278.78-acre stand-up gas spacing unit comprising Lots 1, 2, 7, 8, 9, 15, and 16 (E/2 equivalent) of Section 12.

(2) In addition, Burlington is authorized to drill its proposed Huerfano Unit Well No. 258-S at a standard coal gas well location 1190 feet from the North line and 840 feet from the East line (Lot 1/Unit A) of Section 36, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, as an infill well within an existing standard 300.30-acre stand-up gas spacing unit comprising Lots 1 through 4 and the E/2 E/2 (E/2 equivalent) of Section 36.

(3) As proposed by the applicant, Burlington is authorized to produce each of the above-described pilot wells for 180 days; thereafter, the wells are to be shut-in pending further order by the Division.

(4) Jurisdiction of this case 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.



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in cursive script that reads "Lori Wrotenbery". The signature is fluid and elegant, with a large initial 'L'.

LORI WROTENBERY
Director