STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
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. 13841
ORDER NO. R-12723

APPLICATION OF KOCH EXPLORATION COMPANY, L.L.C., FOR AN ORDER AUTHORIZING INCREASED WELL DENSITY AND SIMULTANEOUS DEDICATION ON CERTAIN NON-STANDARD SPACING UNITS IN THE BASIN-FRUITLAND COAL GAS POOL, SAN JUAN COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on January 18, 2007, at Santa Fe, New Mexico, before Examiner David K. Brooks.

NOW, on this 26th day of February, 2007, 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 of the subject matter.

Background and Undisputed Facts

(2) By this application Koch Exploration Company, L.L.C. ("Koch" or "Applicant") seeks approval to drill an additional infill well (third well) to the Fruitland Coal formation on each of three irregularly-shaped, non-standard spacing units in San Juan County, New Mexico.

(3) Koch is the operator of the following non-standard spacing units (the "subject units") in the Basin-Fruitland Coal Gas Pool (Pool Code 71629), located in Township 31 North, Range 8 West, NMPM in San Juan County, New Mexico:

1st Unit:	Section 6:	Lots 3 through 7, SE/4 NW, E/2 SW/4 [W/2 equivalent]
	Section 7:	Lots 1 and 2, E/2 NW/4 [NW/4 equivalent]
	332.94 acres	
2nd Unit	Section 7:	Lots 3 and 4, E/2 SW/4 [SW/4 equivalent]
	Section 18:	Lots 1 through 4, E/2 W/2 [W/2 equivalent]
	330.16 acres	
3rd Unit	Section 19:	Lots 1 through 4, E/2 W/2 [W/2 equivalent]
	Section 30:	Lots 1 and 2, E/2 NW/4 [NW/4 equivalent]
	326.56 acres	

(4) The subject units were established for the Fruitland Coal by Order No. R-9315, issued in Case No. 10056 on October 9, 1990, following the configuration of units previously established in deeper pools spaced on 320 acres.

(5) The configuration of the subject units is a result of the irregular size of the governmental sections. A standard spacing unit in the Basin Fruitland Coal is 320 acres and consists of one-half of a governmental section. However, the west half equivalents of Sections 6, 7, 18 and 19 each comprise substantially less than 320 acres. Accordingly, in constructing these units, half-section equivalents were coupled with quarter-section equivalents in adjoining sections to form elongated units each consisting of slightly more than 320 acres. While a standard 320-acre unit is one mile long and one-half mile wide, these irregular stand-up units are approximately one and one-half miles long (north to south) and only one-third mile wide (east to west).

(6) Well density in the Basin-Fruitland Coal Gas Pool is governed by the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool, as most recently amended by Order R-9768-F, effective July 17, 2003. These rules provide for 320-acre units, with two wells allowed in each unit (subject to certain conditions), provided that the wells must be in separate quarter sections. Koch already has two wells completed in the Fruitland Coal in each of the subject units. However, due to their irregular configuration, each of the subject units includes three, rather than two, quarter section equivalents. By this application, Koch seeks to locate a third Fruitland Coal well in each of the subject units, such that there will be a Fruitland Coal well in each quarter-section equivalent.

Parties and Evidence

(7) At the hearing, Koch appeared through counsel and presented land and engineering evidence in support of its application.

(8) BP America Production Company ("BP"), an operator of spacing units in the Basin Fruitland Coal adjoining the subject units, appeared through counsel and presented land, geologic and engineering evidence in opposition to the application.

(9) Koch presented testimony as follows:

(a) The subject units and surrounding units that BP operates are located in the "fairway" or "high-productivity area" of the Basin Fruitland Coal.

(b) The Division has authorized the drilling of infill wells on quarter-section equivalents comprising less than 160 acres in many places in the high productivity area.

(c) Based on calculations derived from the testimony of experts in the 2003 Commission hearings that resulted in adoption of existing special pool rules for the Basin-Fruitland Coal Gas Pool, the proposed additional wells should result in an incremental recovery of gas in the range of 0.5 to 1.3 BCF from each of the proposed wells.

(d) Analysis of a cross-section of the relevant area indicates that, while some coals can be correlated, others are present only in some wells or areas, indicating a probability that the proposed additional wells will intersect coal zones or stringers that cannot be produced from any existing well.

(e) Production decline curves plotting production from 31 parent wells (drilled on 320-acre spacing) and 24 infill wells (drilled on effective 160-acre spacing) within a two-township area including the subject units indicates that infill wells have not significantly, if at all, accelerated the decline of production from the parent wells, thus suggesting that the average drainage area of the existing wells is not greater than 160 acres.

(10) BP presented testimony as follows:

(a) BP owns interests in all of the offsetting units adjoining the subject units except in one section to the north.

(b) Many of the wells that have been authorized on quarter-section equivalents comprising less than 160 acres in the high productivity area are located in federal exploratory units, where, as a consequence of unitization, correlative rights will not be affected by an increase in well density.

(c) The principal productive coal zones in this area can be easily distinguished and correlated across the subject area.

(d) When drilling infill wells to the Fruitland Coal on the existing 160-acre pattern in the subject area, BP has encountered substantially depleted pressures, indicating that existing wells may be draining areas in excess of 160 acres. Furthermore, BP has observed effects on its parent wells within hours of placing infill wells on production.

(e) Based on estimates of mapped gas-in-place prepared by BP engineers for the subject units and surrounding units, the existing wells in the subject units have equivalent drainage areas of 313 acres, 383 acres and 498 acres, respectively, for the three subject units. Thus these units are being effectively drained by the existing wells.

(f) The existing wells on the subject units are among the more productive wells in the vicinity, indicating that they are more likely draining reserves from other areas of the pool than being drained by wells on adjoining units.

(g) Fracture patterns in this vicinity favor drainage along a north/south axis, rather than along an east/west axis. Hence the greater north/south distances between the wells in the subject units resulting from the elongated shape of these units probably does not equate to a disadvantage for these wells in draining the relevant area.

Analysis and Conclusions

(11) The average acreages per well for the subject units, each of which contains two wells, are 166.47 acres, 165.08 acres and 163.28 acres, respectively, or an average for the three units of 164.94 acres, only slightly greater than the 160 acres per well provided in the pool rules for standard units.

(12) Granting Koch's application for an additional well in each of the subject units would reduce the number of acres per well in these units to 110.98 acres, 110.05 acres and 108.85 acres, respectively, or an average of 109.96 acres.

(13) Analysis of the evidence Koch presented regarding undersized units in the high productivity area of the Fruitland Coal where the division has allowed a well density exceeding one well per 160 acres indicates that all but five such units are within federal exploratory units, where drainage between drilling blocks does not present correlative rights issues. For the remaining five units where a higher well density has been allowed, the average acreage per well authorized ranges from 132.57 acres to 155.81 acres, substantially greater than the109.96 acres that Koch seeks.

(14) Koch's estimate of incremental production that would be achieved from its proposed infill wells was derived by taking the estimated incremental production from infilling the entire high productivity area on a one well per 160-acres basis (from 320 acres), calculating a per-acre incremental production from that estimate, and then multiplying that per-acre incremental production by the number of acres that would be assigned to the proposed wells.

(15) This methodology is not particularly persuasive for two reasons. First, the assumption that the amount of incremental production per acre resulting from a particular

increase in well density can be extrapolated as a linear function to progressively small densities is not intuitively persuasive, and Koch's witness did not explain any specific reasons for accepting that assumption in this case. Second, this method is not specific to the subject units. If valid as to the relevant density (here an increase from one well per 160 acres to one well per 110 acres), it would support allowing an increase in well density throughout the high productivity area, but would not provide a specific basis for authorizing a density for the subject units greater than that allowed for adjoining units.

(16) Koch presented evidence that the Fruitland Coal formation is composed of multiple discontinuous zones or stringers of coal, and introduced logs showing various such zones and stringers encountered in the subject area. However, it did not provide any specific evidence of the probable significance of these facts for the present or proposed wells in the area. BP's geologic witness, by contrast, identified the specific coals that, according to his testimony, account for most of the production in this specific area, and demonstrated how they could be correlated across the area.

(17) BP presented calculations of the drainage area of the existing wells in the subject units. According to BP's calculations, the existing wells will probably drain areas substantially larger than 320 acres for two of the subject units, and almost 320 acres for the remaining subject unit. These calculations would indicate that the existing wells are effectively draining the subject units, and that additional wells would be unwarranted.

(18) BP's drainage area calculations are not totally persuasive. In the first place, the testimony indicates that the gas-in-place estimates on which they are based were made before the drilling of existing infill wells in the area, so that these estimates do not reflect all currently available information. Second, the high recovery factors calculated from these estimates for many of the existing wells indicate that gas in place may have been underestimated.

(19) Koch, however, did not present any drainage area calculations, or any data from its existing wells or elsewhere from which such calculations could be derived.

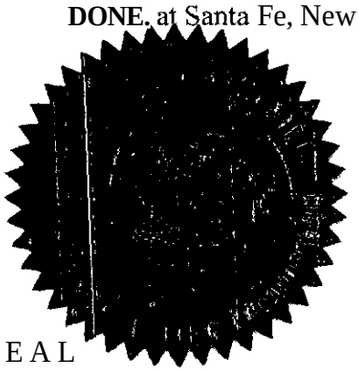
(20) Koch, as the applicant seeking permission to develop units it operates on a well density greater than that authorized by the pool rules, had the burden of presenting evidence to demonstrate that the requested additional wells are necessary to prevent waste or to protect the correlative rights of the owners of the gas in the subject units. It has not met that burden.

IT IS THEREFORE ORDERED THAT:

(1) Koch's application for an order authorizing increased well density and simultaneous dedication for certain nonstandard spacing units in the Basin-Fruitland Coal Gas Pool is denied.

(2) 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.



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.
Director